THE EFFECTIVENESS OF PARTNERING AND SOURCE SELECTION IN JOB ORDER CONTRACTING

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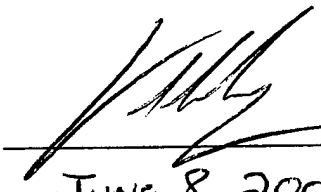
Signature 

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Abstract

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Job Order Contracting (JOC) is an alternative to the sealed bid method of procuring facility construction and repair services. The concept was developed by the Federal Government in the 1980s to reduce the processing time and administrative effort required for smaller construction jobs. A typical JOC contract is two to five years in duration and work is issued through individual delivery orders, with cost determined by pre-negotiated unit prices for a myriad of tasks. However, there are various methods that JOC contracts are procured and administered. Due to the need for negotiations on individual delivery orders and the lack of a defined scope of work at the beginning of the contract, teamwork and frequent communication are required for a successful contract. A formal Partnering process is often used in JOC to focus the parties in that direction. In addition, many JOC contracts employ a negotiated source selection procedure to choose a qualified contractor instead of using a sealed bid method.

Research was conducted to examine the effectiveness of Partnering and source selection procedures to determine if their use enhances success of JOC. Thirty-five sites nationwide were surveyed to assess opinions on performance of the contract from both the owner and contractor perspectives. Areas for analysis included construction performance, administrative support, the owner-contractor relationship, and the participants' satisfaction with the contract. Analysis of survey data revealed that owners and contractors perceived advantages in the use of Partnering and source selection procedures in improving key areas of contract performance and overall satisfaction.

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"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, and comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows the great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat."

Theodore Roosevelt
Citizenship in a Republic; Speech Delivered at Sorbonne, Paris
April 23, 1910

Dedication

This Thesis is Lovingly Dedicated To Riley Elizabeth Mulcahy:

May your hunger for knowledge be surpassed only by your thirst for adventure.

Introduction

Job Order Contracting (JOC) is a relatively new method for facility owners to contract for construction services. Developed by the Army as an alternative to the traditional design-bid-build method of contracting, JOC has been very successful in expediting delivery, reducing in-house workload, and allowing owners flexibility, but there are problem areas. Awarding JOC contracts based on low bid vice negotiated source selection may create situations where negotiated unit prices inaccurately reflect the true cost of construction, leading to adversarial relationships and poor performance. In addition, the nature of the contract lends itself to a Partnered approach, where all stakeholders of a project can trust each other and work together to achieve the best results. Non-Partnered JOC contracts may tend toward more adversarial relationships and inhibit contract performance.

This thesis attempts to study the effectiveness of Partnering and source selection as they are employed in the administration of Job Order Contracts nationwide. In Chapter I, the Literature Review discusses both traditional sealed bid and JOC contracting methods in addition to a Partnering and "Best Value" source selection procedures. The Research Methodology in Chapter II explains which areas of JOC performance were analyzed, how sites were selected for survey, the development of the surveys, and the collection of data. The survey response data and the results of the statistical analysis are presented in Chapter III, Analysis of Data. Finally, Chapter IV contains the conclusions and recommendations of the study. The surveys used in the collection of data are included in Appendices A and B, while Appendix C summarizes the comments received in the surveys.

Chapter I: Literature Review

1.1 Traditional Sealed Bid Public Works Contracting

Public works contracts vary from private sector contracts in that legislation sets the contracting guidelines for contracts and the public interest demands safeguarding process integrity. Thus, the requirement for full and open competition is a hallmark of public contracts. To minimize the chance of favoritism or corruption, the sealed bid contracting method was developed to award a contract on the basis of price alone. Also referred to as the "Design-Bid-Build" process, this system has long been the most prevalent option for large and small public works contracts.

The first step in the procedure is to prepare a design and may be done with in-house personnel or through a contract for Architect/Engineer (A/E) services. Generally, smaller projects are designed in-house, while A/E designs are used for larger projects due to the higher complexity and workload. Once the design is completed and reviewed, a bid specification is prepared, then sent out to contractors for preparation of bids. The bid specification defines the rules for that particular procurement, including the format of the bid, any administrative requirements, and the deadline for bid submission.

Contractors estimate the cost of the project based on the design and submit a lump sum price for a project that remains secret to everyone involved in the process until a predetermined time, known as the "bid opening." At bid opening, the bids are compared in a public forum, then the contract is awarded to the bidder who has met all requirements of the bid specification, is capable of performing the work, and will charge the lowest sum to complete the project. The sum can either be measured as one price for the entire project, several prices for different parts of the project, unit prices for elements of the project based on estimated quantities, or a combination.

The main strengths of sealed bid contracting are its simplicity and objectivity. Through the period up to groundbreaking, there is a relatively easy recipe to follow: design the project, develop a bid specification, advertise the project, collect and open bids, then award the contract to the low bidder. The selection criteria are objective and clear; from the pool of bidders who properly and fully respond to the solicitation and are deemed responsible to perform the work, the lowest price wins the job. Since no judgement is required in the determination of the winning bid, it is difficult to corrupt the system with bribery, favoritism, conflicts of interest, or other unseemly methods.

The most significant benefit achieved through the sealed bid method is the high degree of competition that is encouraged. There is no limit to the number of bids that may be received in a standard sealed bid procurement, so control of the initial cost of construction is excellent. It also allows every responsible contractor in the community the opportunity to receive work from the public owner, which is an important social goal in most government entities.

1.2 Issues With Sealed Bid Contracting

Problems Developed Over Time

Sealed bid contracts have been used in public works construction for a very long time. There have been many developments in both contracts and construction that have changed the substance of sealed bid contracting. The technical complexity of projects has grown immensely, resulting in the specialization of subcontractors. The lessons of construction litigation have been incorporated into contract documents, while litigation itself has expanded its role in the resolution of disputes.[1] Contractors have become sophisticated experts on contract interpretation in an effort to protect their interests and

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[1]Michael T. Kubal, *Engineered Quality in Construction: Partnering and TQM* (New York: McGraw-Hill, 1994), 163.

maximize profit.[2] Increasing attention has focused on the problem areas within sealed bid construction contracting.

Linear Timeline

A problem inherent in the sealed bid method is the long lead time required for completion of a given project. The cost for a simple "one-follows-another" process is an inefficiency in use of time.[3] The private sector, realizing that time is money, has always recognized this a major cost and has increasingly abandoned sealed bid contracts. Traditionally, public works contracting officials have never placed a high emphasis on speed; However, current pressure to make government more efficient has changed this paradigm.[4] Though design times will vary based on scope, the procurement process times for large and small projects can be similar, which makes the process very inefficient for smaller work.[5]

Administrative Burden on Small Projects

The administrative costs of sealed bid procurement must be considered in considering the efficiency of the process, especially when compared to the value of the construction services acquired. Design contract administration, bid specification preparation, advertisement, and contract award expenses may seem relatively minor when compared to a $14 million contract for a new administration building, but can be

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[2]Andrew M. Civitello, *Contractor's Guide to Change Orders* (Englewood Cliffs, NJ: Prentice-Hall, 1988), 5.

[3]David S. Haviland, *Project Delivery Approaches: An AIA Guide* (American Institute of Architects, 1975), 6.

[4]William B. Moore and Carl F. Stout, *Job Order Contracting: A Procurement Success Story* (Bethesda, MD: Logistics Management Institute, 1988), 2-1.

[5]Dean T.Kashiwagi, *Job Order Contracting Performance - 1998 (*Arizona State University: Center for Job Order Contracting Excellence, 1998), 2.

alarmingly large when applied to a $125,000 remodeling project.[6] In most public contracting branches, smaller projects significantly outnumber the larger dollar value work, which greatly magnifies the inefficiencies' total effect.

Adversarial Relationships

The roles and responsibilities of the various parties have divergent motivations in sealed bid contracts. The three-legged stool of owner, designer, and builder is dependent on each party fulfilling their separate responsibility to achieve a successful project. However, each party's motivation is to reduce the size of their leg, which has the effect of shortening the stool, or in this case, limiting the success of the project. In comparing the roles of the parties once design has been completed, it is easy to see how adversarial positions are readily generated throughout the project.[7]

The owner's role in the project, once requirements are identified, is to contribute resources in the form of project funding. The sealed bid method ensures that the smallest possible initial contribution will be made. Because of the assumption that the design is complete and free of defects, the owner views change orders as an attempt by the contractor to increase profit and will therefore strive to minimize funding for change orders.[8] If the contractor indeed proves that the design is flawed, the owner will look to the architect for no-cost redesign or for compensation under design liability if construction costs are incurred due to the flaw. Either way, additional funding for design flaws will be resisted as well. The result is that the owner will focus on minimizing contributions to the project.

With the design complete, the architect/engineer has already invested the majority of effort, and now shifts to the role of design interpreter and advisor during the

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[6]Kashiwagi, 17.

[7]Kubal, 47.

[8]Civitello, 25.

construction of the project. However, since the fee for services has already been set, the firm will look to minimize the expenditure of additional effort, as that will take away from the existing profit.[9] Often, this results in a tendency to interpret design inconsistencies in a manner that results in the least additional effort. In admitting a design error, the responsibility falls on the architect to provide redesign at no cost. As that results in added expenditures, the architect will seek fault elsewhere, as in the owner's miscommunication of intent or the contractor's poor workmanship. Like the owner, the architect's contributions to project success will always be constrained by a divergent motivation.[10]

The contractor in sealed bidding acquires the overwhelming majority of the risk during construction, and consequently has the most to lose if the project fails. Conversely, the success of the project can be measured in profit earned from the job. Since there is a natural conflict between profit and costs throughout the project, the contractor's motivation is to minimize costs, and consequently, his or her contribution to the project.[11] The pride in workmanship displayed by the skilled craftsman takes a backseat to the fiscal reality of meeting a minimum standard. In some cases, profit as bid is minimal even when costs are in line with estimates, and the contractor's interest in the project is minimal as well, diminishing the success of the job.[12] In other cases, the contractor's costs are above estimates and the project is losing money, tempting the contractor to reduce costs below the level that would fully satisfy the specifications. Ultimately, this divergent motivation has the potential to significantly impact the success of the contract.

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[9]Kubal, 50.

[10]H. Murray Hohns, *Preventing and Solving Construction Contract Disputes* (New York: Van Nostrand Reinhold, 1979), 23.

[11]Kubal, 74.

[12]Hohns, 7.

The separate responsibilities and conflicting motivations mentioned above create a situation that breeds mistrust and conflict between the parties. Clearly, the most significant conflict is between the owner and contractor, due to the influence that the contractor's performance has on the outcome, the importance of the outcome to the owner, and the proportioning of risk between owner and contractor.

In many disputes, the owner perceives that the contractor's goal is to recover unanticipated costs, increase profits, or improperly shift risk to the owner. On the other hand, the contractor may feel that the owner is trying to get "something for nothing" in a change order or improperly shifting risk to the contractor. This adversarial position inhibits communication, as each side guards information that would give themselves an advantage in negotiation. The hard feelings generated in a dispute will spill over into other areas of the work, as resentment leads to poor communication and problems in otherwise satisfactory parts of the project. In the end, the attainment of success becomes impossible.

This situation becomes aggravated when the successful low bidder has intentionally priced the work at lower than actual cost to "buy in" to the job. The contractor starts at a disadvantage, and must either seek to recoup money "left on the table" through inflated change order prices or by installing substandard work.[13]

Defective Plans and Specifications Lead to Unpredictable Cost

The sealed bid system assumes that the contractor can give one lump sum price based on a complete set of plans and specifications. If the plans and specifications contained every piece of information the contractor needed to perform the work and were free of errors, then the price as bid should be the price for the complete project. In practice, this rarely occurs.[14] The design package usually contains mistakes, conflicts

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[13]Hohns, 21.

[14]Hohns, 34.

between different parts of the design package, or omissions of necessary details. At best, these details are discovered in time for changes to be made at no cost to the owner. At worst, work that has already been constructed must be torn out at tremendous cost.

Most design driven changes, however, will cost the owner extra money and may extend the completion date of the project. The sealed bid has been called a "guaranteed minimum price," since the final cost will not be known until after construction is completed and all potential contractor claims are resolved.[15] This is especially problematic in public works projects, as a fixed budget allowance permits little, if any, change in the total contract price.

Limited Value Engineering

The sealed bid method only involves the contractor after the design is complete, so there is no potential for the contractor to offer valuable advice and assistance in development of the design. From methods to materials, the contractor often has a realistic account of the constructability, cost elements, and market conditions that will affect the project. The designer, though qualified in the art and technology of the construction, lacks the contractor's perspective and makes many assumptions during the design process that could easily be clarified through collaboration with the contractor.[16] Though there is opportunity for value engineering after the contractor reviews the design, this is limited by the design as a whole and usually results in little more than material substitutions that save only a small percentage of the overall cost.

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[15]David E. Allen, *Changing Delivery Methods: Is Lump Sum Bidding Dead?* (Presentation to University of Washington CM520 Class, November 18, 1999.

[16]Haviland, 9.

Construction Firms Treated as Commodities

The major assumption in the sealed bid process, and possibly the most flawed, is that all bidders will perform at the same level. Rather than recognizing construction management as a professional service, it is viewed as a commodity that can be purchased like lumber or concrete.[17] Essentially, performance is treated as a constant and price as a variable in the sealed bid equation.

In reality, each contractor is different, with various levels of qualification, experience, training, organization, and competence. Each contractor will approach the job differently, with alternative methods, equipment, and schedules. Some contractors have developed strong relationships with subcontractors and suppliers that will serve the project well, while others have reputations for late payment and unethical practices in their dealings with subs and suppliers, setting the stage for work disruptions, material delays, and claims.

Declining Construction Industry Performance

Though the issues mentioned above have a negative effect on a specific project's success, the impact of many years of sealed bid contracting practices has had an adverse impact on the construction industry as a whole.[18] To be a top performing firm in any industry, a percentage of the profits must be reinvested in research and development, training, and retention of high quality personnel. Sealed bidding forces construction profit margins to the lowest possible level, severely curtailing the reinvestment ability of the construction industry. Also, there is no reward for outstanding performance in the sealed bid system. Superior performance takes extra effort, which drives costs higher, making bids higher and less competitive. Performance to the minimum acceptable quality level reduces cost and makes bids more competitive. This results in a reverse incentive

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[17]Allen.

[18]Kashiwagi, 5.

for excellence, a sure sign of an unstable industry.[19]

Dr. Dean Kashiwagi has created a model that shows the relationship between competition and performance as it relates to the construction industry (Table 1).

Table 1: Construction Performance Model[20]

III High Performance Perceived High Cost	**II** High Performance Competitive Cost
IV	**I** Minimum Quality Low Cost Declining Performance

Quadrant I represents the effect of lump-sum low-bid contracting. Competition reduces cost, but reliance on low price drives down performance.

The system has also created an attitude of gamesmanship in many low-bid contractors. Those contractors who have been in the sealed bid business for a few years have often learned the rules of the sealed bid game "the hard way" after losing money on previous contracts.[21] The scenario becomes a "win-lose" situation, where the owner becomes the opponent and "tactics" are employed to maximize profit. Although there is high competition for the initial bid, contractors recognize that once they are awarded the

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[19] Kashiwagi, 5-7.

[20] Kashiwagi, 6.

[21] Civitello, 5.

job, they are in a sole source negotiating arena concerning change orders.[22] Instead of waiting for the discovery of change orders, contractors "prospect" for errors, omissions, or conflicts in the design.[23] After assessing the potential value of changes, strategies for resolving the changes are developed to maximize the contractor's advantage during negotiation.

1.3 Job Order Contracting

Background

Job Order Contracting (JOC) was developed by the Army in Europe as an alternative to the traditional sealed bid method of construction contracting.[24] At the time, there was tremendous pressure on the Army contracting officials to reduce the timeframe needed to procure construction services, to make progress on a backlog of work orders despite a shrinking in-house staff, and to improve quality. JOC was conceived as a way of rolling many small jobs into one large contract awarded to a single provider using a unit price format. The main goal was to minimize the administrative contracting burden by eliminating the need to develop separate bid specifications and competitively bid each single job. The large contract's general requirements could be negotiated once, scaling back managerial requirements to just scope definition and quality issues. In addition, it was hoped that dealing with one contractor would significantly reduce the in-house effort to supervise a myriad of small contracts with many different contractors.

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[22]Hohns, 9.

[23]Civitello, 87.

[24]Leif T. Erickson and Patrick D. Murphy, "The Job Order Contracting Solution", *Civil Engineering* (April 1994), 70.

The JOC Concept

A Job Order Contract (JOC) is an indefinite delivery-indefinite quantity contract that usually is awarded for one year with up to four option years. Specific projects are not defined at time of award. Instead, the contract encompasses a broad selection of facilities construction, maintenance, repair, and renovation type work that may develop during the duration of the contract. Unit prices determine the overall project cost, but JOCs vary from traditional unit price contracts in that the basis for pricing is a pre-published unit price book that covers costs for thousands of individual construction tasks. The price book is part of the contract specifications and can be either a government-produced book or a private sector estimating guide, such as the Means Estimating System.[25] The contractor's bid is actually a coefficient applied to the book's unit prices to decide the price of work. The coefficient covers the contract's general requirements, taxes, labor burden, overhead, and profit. For example, a coefficient bid of 1.06 would increase the as-published cost of line items by 6% to cover all costs, overhead, and profit of the work, with no other markup required. For example, a line item for installing nylon carpet with a list cost of $20.84 per square yard would be priced at $22.09 per square yard under this contract.

The process for issuing work under the contract is relatively simple, as the contractor has already been selected and has satisfied all of the general requirements such as bonding, safety plans, quality control plans, and insurance. The level of design may vary greatly from a site visit with the requesting party to verbally communicate the work requirement to a fully designed package that was prepared for sealed bid. Once the contractor and owner agree on a scope of work, a detailed cost estimate is submitted by the contractor listing all unit prices required for the job. After the owner verifies that the line items and quantities listed are proper, then a job order is issued and construction

[25]Erickson, 69.

begins. The process from identification to construction ranges between 20 - 30 days.[26]

Advantages of JOC

The JOC concept has several key advantages over the traditional design-bid-build method that have impressed facility owners in both the public and private sectors. Though the most significant benefits are attained through accomplishment of small repair and renovation jobs, the advantages apply to large JOC construction projects as well.

Response Time

The most recognized benefit of JOC is by no coincidence the reason it was created in the first place: to shorten the response time for customers requesting construction services. Since the JOC contractor has already been selected, the time required for bid specification development, advertisement, solicitation, and contractor award are eliminated for individual projects.[27] Since the JOC process does not require a full design, a site visit is all that is needed to convey information to the contractor. For very small jobs that are simple in scope, this usually means that a design can be bypassed completely, with the contractor providing details on how the work as scoped should be accomplished. The owner, rather than creating the design, simply reviews and either modifies or approves the proposal.[28] A job order can be issued to the contractor in less than 30 days of a customer request, with a comparable project taking up to 180 days to award a contract under the design-bid-build process.[29] A comparison of Army procurement times between JOC and non-JOC projects showed that JOC delivery orders

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[26]Kashiwagi, 19.

[27]Kashiwagi, 20.

[28]Erickson, 69.

[29]Kashiwagi, 19.

are issued in 18-27% of the time it takes for non-JOC awards.[30]

Reduced Administrative Burden

With the elimination of boilerplate requirements from individual jobs, the administrative burden of JOC construction is minuscule compared with design-bid-build. Paperwork is reduced to only those documents pertaining to the technical aspects of the work. The information generated during site visits, scope definitions, discussions on cost estimates, and schedule delineation is recorded in a streamlined manner and contained in a file for later reference. Though quality assurance and supervision are still required, the ease of working with one contractor as compared to interfacing with small individual contracts is invaluable. For instance, the procedures for accomplishing work at a particular site need only be explained once, unlike separate bids where individual preconstruction meetings and training are required for each job. In addition, the owner and contractor personnel that interface regularly become familiar with each others processes, minimizing confusion and promoting efficiency. Because the contracting staff spends less time on individual procurements, they are freed up to process a higher number of work requests, which allows for a rapid reduction in maintenance backlog.[31]

Lower Design Costs

As stated above, design costs can be practically eliminated for smaller work items. Though an owner-provided design may be necessary for larger and more complex JOC projects, design level of effort may be reduced to provide only those details that are outside the contractor's area of expertise. This "shared" design effort means that for a building electrical upgrade, the designer would focus on the building's load and required

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[30]Moore, 2-2.

[31]Moore, 2-11.

panel and transformer size, while the contractor could determine conduit routes and receptacle placement. Since most JOC contract specifications include a requirement that all work meets applicable codes, many typical bid specifications and submittals can be omitted. In this manner, effort of the Architect/Engineer is reduced and design costs are minimized.[32]

Value Engineering and Constructability

In those cases where design is required, the JOC contractor can participate in the preparation of the design and advising the designer on constructability issues. In the electrical upgrade example cited above, the contractor may not only reduce the design effort, but reduce the construction cost as well. By teaming with the designer to optimize placement of the transformer and electrical distribution panels, the amount of structural demolition and length of cable runs can be reduced. In a traditional design, the designer applies his strength, engineering knowledge, along with a weakness in constructability experience. The inclusion of the contractor as part of the design team eliminates the weakness, creating a much more complete and cost-effective design.[33] This also allows for a shorter construction time, as the contractor is intimately familiar with the design and can influence the design to allow for speed of construction.

Teamwork

The traditional sealed method promotes adversarial relationships, yet the JOC format lends itself to an environment of teamwork and cooperation. The long-term nature of a JOC encourages both contractor and owner personnel to work together to achieve a mutually beneficial relationship.

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[32]Erickson, 69.

[33]Erickson, 69.

For the contractor, the incentive is future profit. Since the price is already set by the coefficient, the contractor can only increase profit in an individual job order by trying to negotiate unreasonable line items and quantities or by reducing quality of workmanship. If negotiations become difficult and quality suffers, the owner will choose another contracting avenue and few job orders will be issued to that contractor.[34] On the other hand, if negotiations are straightforward and honest, and high quality workmanship is the norm, then the JOC contractor can expect many more delivery orders.[35] The mathematics are simple: small profit on many projects is greater than a large profit on a handful of jobs. The natural incentive, then, is for good performance at reasonable prices and a pleasant experience for the owner.

The owner's representatives also have a vested interest in the success of the contract. For those sites with unpleasant experiences in sealed bid contracts, a large backlog of work requests, and impatient customers, a JOC can be an exceptional way to accomplish work compared with other methods available. In fact, 100% of Army Installation Commanders surveyed in 1988 declared JOC a "must-have" contracting tool.[36] Like the parable of "The Goose that Laid the Golden Egg," the last thing the owner wants to do is kill the goose. Though not abandoning the requirement to safeguard their interest, the understanding that an adversarial relationship can eliminate a viable contracting option encourages owners to treat the contractor with the respect due a valued business partner. Sometimes, this can be a difficult transition for those who are ingrained with the "cops and robbers" mentality of sealed bid contracts, but many officials welcome the chance to relinquish hard line stances and conduct business in an environment of respect and open communication.

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[34]Erickson, 70.

[35]Kashiwagi, 20.

[36]Moore, 2-4.

Enhanced Quality

Free from focusing on administrative requirements and adversarial positions, the owner and contractor personnel can turn to the important elements of construction: time, quality, and customer satisfaction. The teamwork that exists between contractor and owner allows the tenant to be intimately involved in all phases of the job, from design requirements to scheduling outages and work disruptions.[37] The job can be scheduled better since tenant and contractor needs can be meshed through open discussion, and contractor work stoppage can be minimized, keeping costs down. The natural incentive for a quality product and a satisfied customer, if fostered by all parties, will result in a successful project.[38]

Minimal Change Order Rate

JOCs typically enjoy a very low change order rate due to the integration of the contractor in scope definition and design, the pre-negotiated unit price system, and the shift away from adversarial relationships.[39] The changes that do occur are mainly customer requested, due to the pre-priced nature of modifications and ease of execution. The joint scoping process and open communication during construction generates a valuable flow of ideas that obviate changes, resulting in a reliable up-front cost.

Because the claims process is inherently adversarial, its use is avoided in JOC. Both contractor and owner work to resolve any differences at a lower level, realizing that a claim on one delivery order can inhibit the performance and/or award of future delivery orders.

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[37]Moore, 2-6.

[38]Moore, 2-6.

[39]Erickson, 70.

1.4 Partnering

The Partnering Concept

The inherently adversarial positions in sealed bid contracting, with each side maintaining divergent motivations and general mistrust of the other, place barriers between the parties when a disagreement arises. The atmosphere of mistrust, combined with the litigious bias of modern construction disputes, results in carefully screened communication and a "win-lose" mentality.[40] True resolution of issues cannot occur in such an environment. Formal Partnering seeks to avoid disputes through frequent and open communication based on a relationship of trust.[41]

Partnering was developed to prevent barriers from springing up in public works projects by keeping the parties committed to a common vision and fostering trust among participants. The common vision is determined by a consensus of the group, and usually focuses on goals for project success, including customer satisfaction, quality, time, and dispute resolution. Trust leads to frequent and open dialogue, which is essential in resolving disputes. It is through participants working together to achieve a common vision, with a foundation built on strong communications and trust, that successful projects are realized.[42]

The successes of Partnering are well documented. In recent years, the use of Partnering on construction projects has seen a dramatic increase.[43] Its cornerstone is a partnering agreement where both parties focus on a common set of project objectives

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[40]Thomas R. Warne, *Partnering for Success* (New York, NY: ASCE Press, 1994), 1.

[41]Warne, 5.

[42]Kubal, 106.

[43]Warne, 70.

and problem solving methods.[44] It is best applied in large, long-term projects where the relationship can be developed and there is an incentive to work together.[45] The Army Corps of Engineers pioneered use of Partnering in the 1980s and has seen a dramatic decrease in its volume of contract claims and appeals. From 1988 to 1994, claims were down 71%, while 365 appeals were filed in 1994, down from 742 appeals in 1991.[46] The Air Force used Partnering on a $226 million Large Rocket Test Facility, finishing 114 days ahead of schedule and $12 million under budget without any claims or appeals.[47] The Navy has implemented Partnering on its large Base Operating Support Contracts and Job Order Contracts, as well as some individual projects.

Implementation of Partnering in JOC

The format of the JOC contract encourages teamwork through the long-term relationship and inherent incentives that exist for each stakeholder.[48] The implementation of a Partnering program formalizes these incentives into a tangible agreement and is a natural extension of the JOC concept. The first step in the process is to agree to Partner, which should be done as soon as possible after contract award. Each party should select a Partnering "champion," a member of management who will be on a site for the duration of the contract and will ensure that the Partnering environment is promoted and maintained.[49]

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[44]Warne, 13.

[45]Kubal, 129.

[46]Administrative Conference of the United States (ACUS), *Toward Improved Agency Dispute Resolution: Implementing the Administrative Dispute Resolution Act* (February 1995) Ch 3, Sec II. <www.adr.af.mil/afadr/library/docs/acusrpt.html>

[47]U.S. Air Force, Memorandum *Advances in Alternative Dispute Resolution (ADR).* <www.adr.af.mil/afadr/library/docs/secrep2.html>

[48]Kashiwagi, 20.

[49]Warne, 7.

An initial Partnering session should then be scheduled before commencement of work under the contract. During this session, which may last one or more days, the stakeholders become familiar with one another and the overall objectives of Partnering. The next step is to develop a charter that will outline the mutual commitment to success, how that success will be measured, what tasks must be completed to achieve success, and a methodology of how to resolve disputes on the way to success. Finally, the parties must carry this charter with them into the project and treat it as a living document. Successful Partnering takes a daily commitment to its principle and the objectives set forth in the contract. Follow-on sessions should be scheduled to perform "routine maintenance" and to ensure that the charter is being adhered to.[50]

1.5 "Best Value" Source Selection Procedures

The Best Value Concept

"Best Value" Source Selection is a term coined in the Federal government for a contractor selection process developed as an alternative to the sealed bid method. It is based on the common sense premise that price alone may not be an acceptable criterion in purchasing products or services. Rather than selecting the lowest price, an owner applying source selection procedures determines the criteria that is important for the project, and invites contractors to submit proposals that will be measured against that criteria for final selection. The process allows for negotiations between the owner and interested parties, so that all necessary information may be gathered before a selection is made.

The criteria vary for each procurement, but price is always considered to some degree. Common evaluation factors include past performance, key personnel

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[50]Warne, 36.

qualifications, operational methods, and organization plans. Project specific criteria, such as schedule, value engineering proposals, or design considerations are also standard. Since the relative importance of a given factor will vary between projects, each criterion is assigned a weighted value in the source selection plan.[51]

After negotiations have been conducted, the contractor proposals are reviewed and graded by an evaluation board consisting of a group of officials specifically appointed for the project. The proposals are then ranked based on their weighted grades, then compared with their price to determine which proposal represents the best overall value to the owner. Typically, the owner is willing to award the contract to other than the low-priced offerer since a modest increase in price may garner a higher quality product with lower risk of nonperformance or failure.

Source Selection Advantages and Disadvantages

The biggest advantage to source selection is the ability to apply business judgement to procurement. By selecting criteria that are key to the procurement and choosing a contractor based on the criteria, the owner is "steering" the procurement in a positive direction, vice the random chance element of sealed bid.[52] In avoiding the sealed bid practice of buying into the job, the source selection process allows the owner to pay the "right price" initially, negating the need for the contractor to make profit up through later modifications.[53] This reduces adversarial tensions and makes for smoother contract administration, with the added benefit of more predictable costs. By examining the contractor's past performance and qualifications of key personnel, those contractors that have the strongest resume and present the least risk of poor performance would stand a

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[51]"Best Value Buys." Government Executive Magazine (online), January 1995. **<www.govexec.com/procure/articles/0195prs6.htm>**

[52]"Best Value Buys".

[53]Sherie Winston, "Pentagon Pumps Up Performance." *Engineering News Review (online)* (October 1999), **<www.enr.com/news/enrb1100.asp>**

higher chance of selection.[54]

The negotiation process also promotes communication between the owner and potential contractors, which leads to clarification of scope and technical assumptions prior to contract award.[55] Unlike sealed bidding, the proposal can explain the price by listing the assumptions that the estimate was based on. If contingencies were included due to uncertainties in the project, they can be clarified by the owner during negotiations with a reduction in cost. Likewise, if the cost as proposed left out necessary items, the contractor can add those in the initial price, saving a potential change order down the line.

The key disadvantage is the additional administrative effort required to conduct the source selection process compared with the simple sealed bid process. Though selection procedures may be streamlined to fit different scale procurements, they still consume valuable resources like time and personnel. Also, some question why the public owner should pay anything above the lowest price offered, and because the use of subjective judgement is involved, bid protests and process integrity is of concern.[56]

1.6 Summary

The Job Order Contracting format promises the facility owner a cost-effective way to expedite the accomplishment of facility construction and repair projects with a higher quality and reduced administrative effort. Though the requirement for a design may vary by project, the contractor should always be integrated into design development as early as possible to ensure the best result.

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[54]Winston.

[55]Winston.

[56]"Best Value Buys".

Selection of a JOC contractor should be one through a source selection procedure that emphasizes the best value to the owner vice the lowest price. Because of the long-term nature of the relationship, it is important to apply business judgement in the choice of an important partnership and the pitfalls of sealed bid contracting should be avoided. Once selected, the partnership should be formalized through a Partnering agreement to define the common vision and guiding principle of the participants.

By using the JOC format, selection of a quality contractor, and committing to a shared vision based on open communication and trust, public facility owners can revolutionize the way they accomplish construction and repair projects, increasing customer satisfaction and reducing staff workload in the process.

Chapter II: Research Methodology

To study the effectiveness of Partnering and source selection in the administration of JOC, a survey method was chosen to evaluate the opinions of both owner and contractor project managers on the performance of their contract. The survey was designed to measure a broad range of issues, from direct construction of the project to the elements forming the contractual relationship between the parties.

The survey responses would be segregated into four different populations for comparison between each other:

1. Partnered contracts procured through a negotiated source selection using a Request For Proposals (RFP)
2. Non-Partnered contracts procured through a negotiated source selection a RFP
3. Partnered contracts procured through competitive bidding (low-bid)
4. Non-Partnered contracts procured through competitive bidding (low-bid)

The anticipated results should show that Partnered contracts where the source selection process is used have the highest performance levels of all four populations, while non-Partnered/Low Bid contracts should have the lowest levels of performance. The other two sample populations' performance levels should fall somewhere in between.

Types of Contracts Studied

Job Order Contracting had its start with the U.S. Army, but the concept quickly spread to the other Armed Services, then throughout the Federal Government. Today many state universities employ the JOC concept as well. However, though the concept remained the same, the names that were given to the contract format changed. The Army and Navy still refer to the concept as JOC, but the Air Force has termed it "Simplified

Acquisition of Base Engineer Requirements" or SABER. The Coast Guard calls it an IDIQ contract, for Indefinite Delivery, Indefinite Quantity. The various universities that were studied had various names for the JOC process, but the concept remained intact.

Therefore, the study was limited to JOC, SABER, Coast Guard IDIQ, and simplified delivery order type contracts that met the following criteria:

1. Work issued through individual delivery orders under an umbrella contract
2. Line item pricing based on a unit price book with contractor-bid coefficient
3. Multi-trade discipline capability
4. Potential long term contractual relationship (2-5 years)

Contracts eligible for study included only those that were ongoing or were in the closing stages of completion to ensure project managers were very familiar with performance. Contracts that had not been in place long enough for a track record of performance were not included.

Areas for Analysis

Based on the research conducted in the literature review, four key elements of the JOC process were identified as important topics for data collection. These elements consist of the performance of construction under delivery orders, the administrative support required for construction, the quality of relationship between the parties, and the overall level of satisfaction with the contract.

The performance of actual construction manifests itself in much the same manner as traditional construction. The three basic concerns for a construction project that would be measured in the survey are quality, on-time completion, and safety. In addition, job order contracting is heavily reliant on subcontracting, so the scheduling and performance of subcontractors are of major importance for a successful JOC contract. Also, warranty service is an area of concern with so many small projects issued under the

contract and needs to be addressed.

The JOC concept is mainly celebrated for its streamlined nature and high level of responsiveness to an owner's needs. Since many projects issued under a JOC are of an urgent nature and must be accomplished in the most efficient manner possible, the success of this type of contract heavily relies upon the support element. Therefore, information needs to be gathered on all areas of administrative support for JOC construction. Much of this support must work both ways for a contract to be successful, so most of the data was gathered from both the owner and contractor viewpoints. Key areas of support included:

* Responsiveness and timeliness of administrative support (requests-for-information (RFI), submittals, reports, etc.)
* Innovation and Value Engineering (contractor's generation of, owner's reception to)
* Contractor's responsiveness to special needs of the clients
* Ability to solve and prevent scheduling and site coordination problems
* Contractor's management effectiveness (ability to handle many simultaneous orders)
* Level of administrative effort required of both owner and contractor
* Reasonableness of the owner's inspection or Quality Assurance program

The foundation of success in both the construction and support elements is the underlying relationship that exists between the contractor, owner, and in most cases, the end-user. Partnering was designed to apply a formal structure to this foundation and strengthen the connections that are necessary for a successful project. Since the essence of Partnering is a combination of trust and open communication, the levels of trust and communication were measured from both the contractor and owner perspectives. The quality of the relationship can also be measured in the ease of the many repetitive delivery order negotiations and in the resolution of changes, claims, and disputes as they arise throughout the construction process.

Finally, the overall satisfaction of the parties with the contract is the fourth key element and is the culmination of the parties' effort in the first three elements. In the end, it is the most important, not only because it measures the combined success of construction, support, and relationships, but mainly because it determines the actions of the parties after the project is complete. A satisfied owner will likely expand the concept further, leading to better service and streamlined administration, while rewarding the good performance of the contractor with solid references or even award of more construction. The overall satisfaction of the parties is measured in three areas: satisfaction of the owner and contractor, satisfaction of the end-users of the construction, and the owner's perception of efficiency as compared with other contract vehicles.

Selection of Projects for Survey

The search for potential sites was undertaken to collect as many data points as possible for the analysis. Established firms that specialize in JOC were contacted for potential sites. The Center for Job Order Contracting Excellence at Arizona State University also provided some potential sites for analysis. The Army and Navy provided points of contact. In addition, as sites were contacted to participate in the survey, new leads were generated. In the end, 35 sites met criteria as candidates for study. The sites are broken out as follows:

U.S. Army/Corps of Engineers	14 sites
State Universities	7 sites
U.S. Air Force	6 sites
U.S. Navy	5 sites
Other Federal Government	3 sites

Survey Development

Two questionnaires were developed to measure contract performance at each site. One was designed for the owner's JOC project manager and the other was designed for the contractor's project manager at the local site level. The evaluation consisted of two basic scoring systems, a numeric score (from 1 to 5, where 1 = Poor, 5 = Outstanding) and a multiple choice descriptive answer. The Owner and Contractor questionnaires are included as Appendices A and B, respectively.

Several questions are duplicated in both questionnaires, as they measure areas common to both parties such as levels of trust and communication. Other questions were designed for the respondent to grade the performance of another party, such as the owner's scoring of the contractor's management effectiveness. In addition, respondents are asked to make comments about the JOC process at the end of the questionnaire.

The owner's questionnaire consists of twelve numeric scores and nine descriptive answers for a total of 21 questions. The contractor's version contained three numeric scores and six descriptive answers for nine questions. Questions 13 and 14 of the owner's questionnaire were not assessed for this study, as they were included to gather data for a separate research paper.

The JOC/SABER Contractor Performance Questionnaire developed by Arizona State University's Center for Job Order Contracting Excellence was used as a model for the development of these questionnaires.

Data Collection

70 questionnaires were mailed or faxed to respondents at the 35 sites from April 14, 2000 to May 1, 2000. 63 questionnaires were returned by the cutoff date of May 19, 2000, for a 90% response rate. After minor clarification on some survey data, the questionnaires were then segregated into the four population groups shown in Table 2.

Table 2: Sample Population Summary

# of Sites	RFP Source Selection	Low bid
Partnered	**17** (49%)	**1** (3%)
Non-Partnered	**10** (28%)	**7** (20%)

Of the 35 sites surveyed, both owner and contractor questionnaires were received for 28 sites, while at least one questionnaire was received for the remaining seven sites. As only one site was classified as a Partnered/Low bid site, there was insufficient data to analyze for that population and it was excluded from study.

Chapter III: Analysis of Data

The data collected from the survey responses was divided into three sample populations for analysis. Note that sample sizes for the two Non-Partnered groups are somewhat small and will be a concern during the statistical analysis. A summary of site totals and survey responses is depicted in Table 3.

Table 3: Survey Response Summary

Sample Population	Number of Sites	Owner Questionnaires Received	Contractor Questionnaires Received	Overall Response Rate
Partnered + RFP Source Selection	17	16	16	94%
Non-Partnered + RFP Source Selection	10	8	9	85%
Non-Partnered + Low Bid	7	6	6	86%
Totals	34	30	31	90%

Survey response data was tabulated by sample population and by question. A summary chart displays the responses based on the two answer formats, numeric and descriptive. For numeric scores, the means for the three sample populations are presented side by side. For those questions where both contractor and owner supplied answers, both sets of data are presented on one chart. For descriptive answers, the number of responses for each answer is presented for all three sample populations studied. Due to the complexity of the chart type, only contractor or owner answers will be shown on each chart.

The following chart abbreviations will denote sample populations:

P-RFP: Partnered contracts procured via Request For Proposal (RFP) negotiated source selection

NP-RFP: Non-Partnered contracts procured via RFP negotiated source selection

NP-LB: Non-Partnered contracts procured through competitive bidding (low-bid)

The following chart abbreviations will denote descriptive answers:

VH:	Very high	MB:	Much better than	VR:	Very reasonable
H:	Higher than normal	SB:	Slightly better than	R:	Reasonable
A:	Average	S:	Same as	SU:	Somewhat unreasonable
L:	Lower than normal	SW:	Slightly worse than	U:	Unreasonable
VL:	Very Low	MW:	Much worse than	EXC:	Exceptional

3.1 Performance of JOC Construction

The performance of construction is analyzed to determine if a difference in performance is apparent by varying the procurement and administration methods. Owners were asked to grade the contractors' efforts in quality, safety, on-time completion, subcontractor scheduling/performance, and warranty service. All answers in this element are numeric scores. Ideally, the combination of Partnering and RFP Source Selection should result in higher scores across the board in this element.

Quality of Construction

According to the responses shown in Figure 1, it would appear that the RFP process does not affect quality but that Partnering has a tremendous effect on construction quality. This is somewhat surprising, since the goal of the RFP process is to ensure a higher quality product than the low bid process provides. This could indicate that the RFP process is ineffective or that Partnering has a much larger effect on quality than the procurement process.

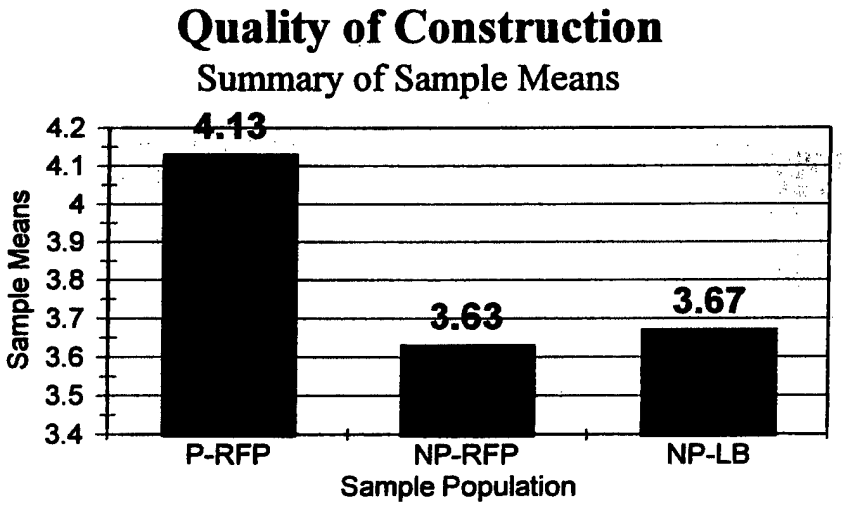

Figure 1: Quality of Construction Summary

Comments from respondents generally did not address quality. Among Partnered/RFP projects, the few comments made were positive. One Non-Partnered/RFP owner specifically addressed a lack of sufficient quality control that led to rejection and rework of installed material. One Non-Partnered/Low bid contractor was praised for outstanding performance.

Contractor's Safety Performance

Data on contractor safety in Figure 2 actually shows that safety performance is slightly higher under low bid than RFP given a Non-Partnered environment. However, the Partnered/RFP environment seems to produce the safest job sites. This may be attributed to the increased level of communication on Partnered contracts as well as a common goal of an accident-free jobsite that many Partnering charters contain.

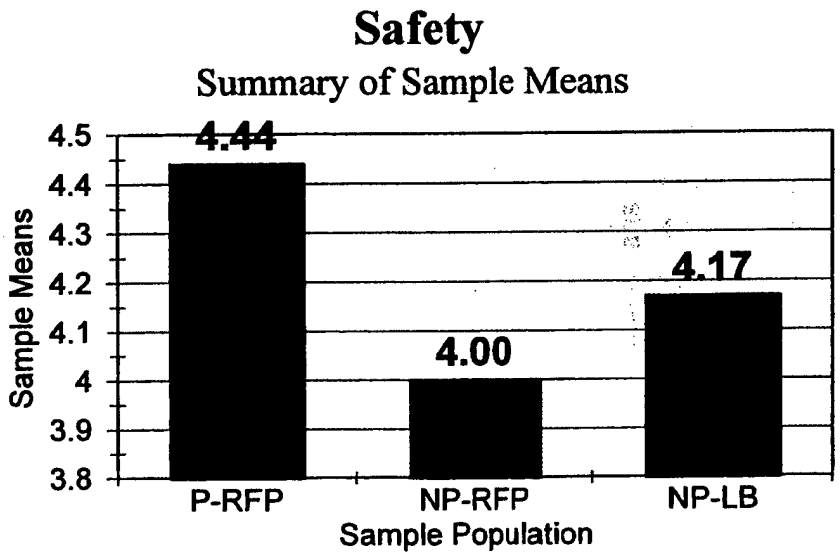

Figure 2: Safety Summary

On-Time Completion of Job Orders

The distribution of responses in Figure 3 fits the expected pattern in this area. RFP contracts perform slightly better than low bid contracts in a Non-Partnered environment, but the addition of Partnering results in a much higher performance score. This may be attributed to the tendency of Partnering to resolve issues disputes quickly at the lowest levels before a dispute can cause costly delays to the work in question. The increased communication at the beginning of the project may also prevent modifications

that delay the project.

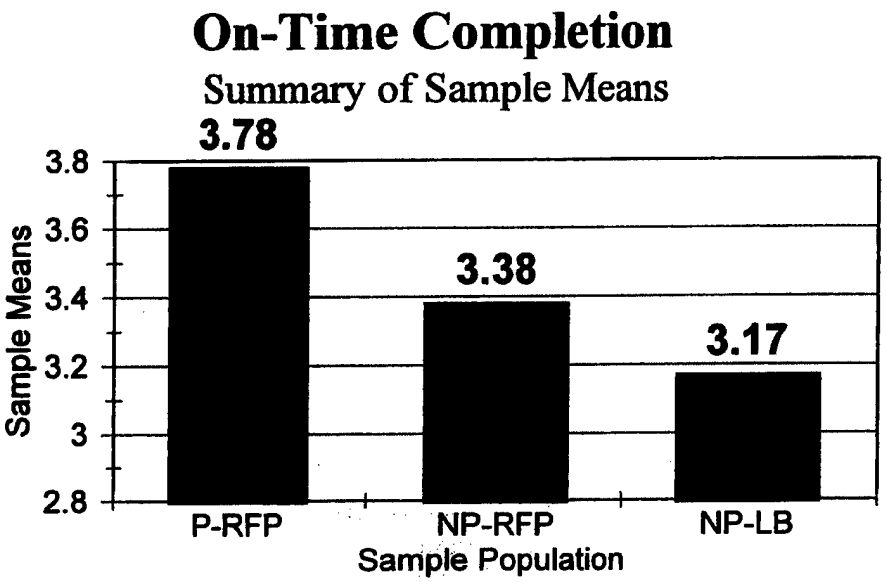

Figure 3: On-Time Completion Summary

Comments were not directed at completion time, but a couple of comments from Non-Partnered/Low Bid sites indicated that the process is slowed if the government has tight restrictions over design.

Subcontractor Scheduling and Performance

The results in Figure 4 indicate a much higher performance level in a Partnered/RFP environment than in the other two formats. Traditionally, JOC contractors staff only the construction management personnel in-house, subcontracting for trades in the execution of delivery orders. This is mainly due to the uncertainty of the type of work issued under a JOC. Usually, the JOC contractors will try to develop relationships with the better subcontractors in the area, as better work can be expected with less hassle and risk than using less qualified subs. In the JOC business, better work leads to more work. If a low coefficient does not allow use of better contractors, problems may result.

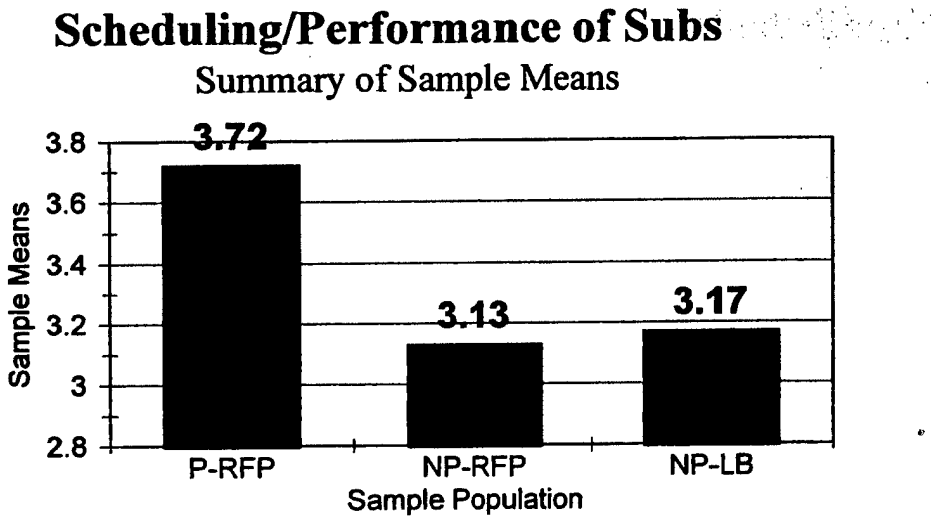

Figure 4: Scheduling/Performance of Subcontractors Summary

One contractor in a Partnered/RFP environment cites "working with subcontractors that we haven't been comfortable with" as a reason for a slow start to a contract. A Non-Partnered/RFP owner blamed "a lot of unqualified subcontractors" for significant rework. A Non-Partnered/Low Bid owner drew a direct conclusion between an artificially low coefficient, unproven subcontractors, and user dissatisfaction.

Warranty Service

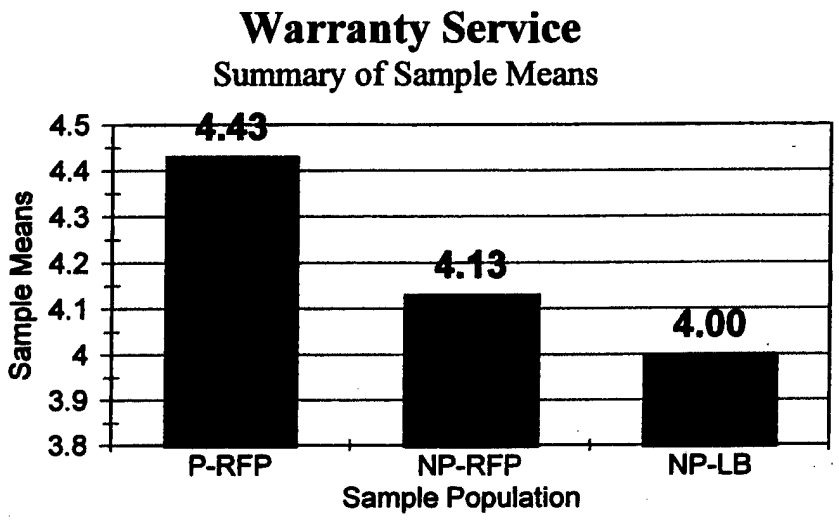

Figure 5: Warranty Service Summary

The trend in Figure 5 is expected, as source selection seems to add improvement over low bid, then Partnering results in even higher performance. Basically, the key here is money. Often, a low coefficient allows for enough money to complete the work, but little or no contingency for rework. Since some warranty issues are a grey area at best, it can become quite contentious when nobody owns up to responsibility for fixing an item under warranty. Quite possibly, the Partnering environment may lead to quicker resolution of warranty issues and therefore higher performance.

3.2 Performance of Construction Support

The contractual support that the parties in a construction project provide each other with is critical in achieving a successful outcome. Decision-making forces rely on the information and support provided to keep the project on schedule and within budget.

The true value of the management of a JOC on both sides of the contract rests with the ability to get ahead of the project and stay ahead of it though its duration. The following areas will measure the performance in this critical area.

Responsiveness and Timeliness of Administrative Support

This area was intended to measure the responsiveness of the owner and the contractor in providing support to each other. The owner was asked to grade the contractor's responsiveness and timeliness with cost estimates and drawings, while the contractor was asked to grade the owner's responsiveness with support such as requests-for-information (RFI) and submittals.

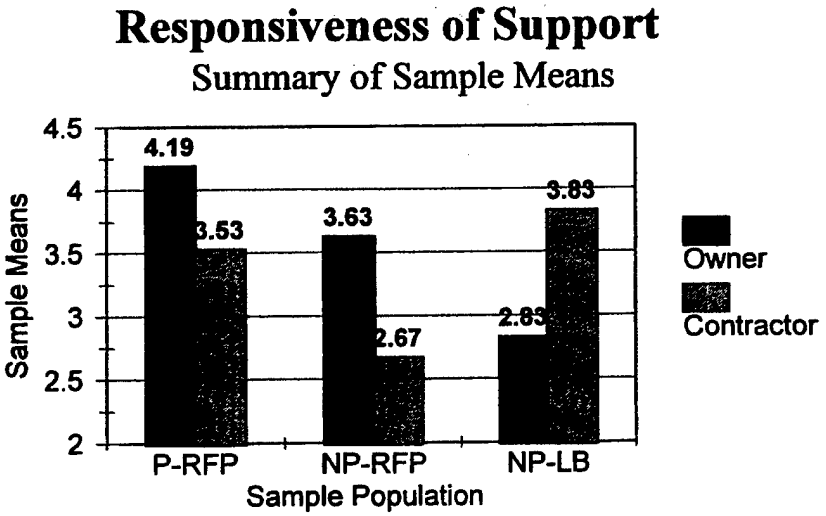

Figure 6: Responsiveness of Support Summary

The owner responses in Figure 6 fit the general expected pattern. However, the contractor answers vary from the expected trend. In theory, the trends of the owner and the contractor should be somewhat similar. In rereading both survey questions, I realized that the owner's questionnaire was straightforward in nature, while I noticed that the contractor question could be inferring that the contractors should grade themselves on

the support they provide to the owner in terms of RFIs and submittals. I suspect that the vague wording of the question could have led to the irregular data pattern.

Innovation and Value Engineering

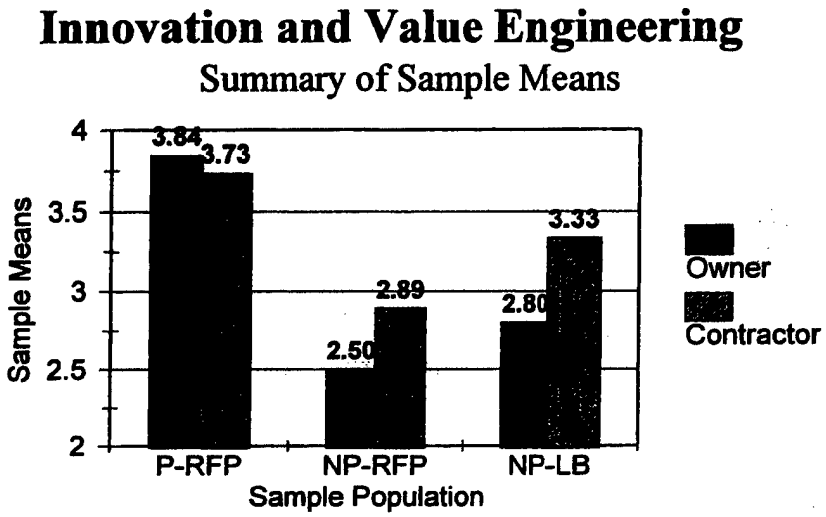

Figure 7: Innovation and Value Engineering Summary

The owner was asked to grade the contractor on the quality and frequency of innovative ideas and Value Engineering proposals, while the contractor was asked to grade the owner on the reception to innovation and Value Engineering proposals. The intent was to measure the climate for innovation among the various formats. There is a consistent connection between the contractor and owner answers here, as expected, so the data looks reasonable. Based on the data in Figure 7, there appears to be a healthy climate for innovation in the Partnered format that the other formats do not seem to share. The Partnered owner and contractor scores are also much closer together, indicating more of a consensus view.

Responsiveness to Client Needs

This question is measuring the ability of the contractor to respond to the needs of the clients using the JOC. The Partnered contracts in Figure 8 show much higher scores than the other two formats, which may be attributed to the greater involvement of the end-user in determining the scope of the work and greater communication among the project stakeholders.

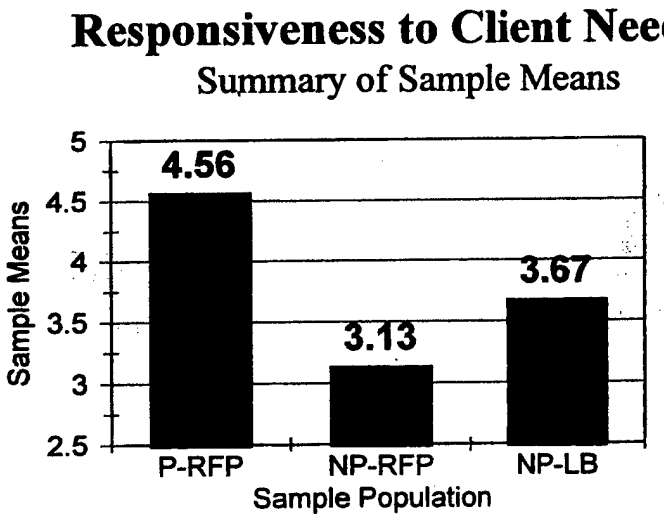

Figure 8: Responsiveness to Client Needs Summary

As for the drop in the Non-Partnered/RFP format score, this can be attributed to two sites that had problems with this very area. The first owner commented that the contractor came in with a limited staff into an environment where they were in direct competition with in-house forces. The feeling was that they should be doing more to please the clients in order to garner more work. The second owner was an Air Force owner working through an Army agency who sees "a large communications gap from the Air Force's request to the contractor's delivery." This could be due to the structure of the contract organization vice the procurement method of the contract.

Ability to Prevent and Solve Scheduling and Site Coordination Problems

The owner was asked to evaluate the ability of the contractor to prevent and solve scheduling and site coordination problems. This is a key area of concern for a JOC since many projects involve repair or renovation of an existing facility and are of an urgent nature where construction work takes place in shorter time frames. This summary (Figure 9) shows that there is a much higher score for Partnered projects and very little difference between the Non-Partnered formats.

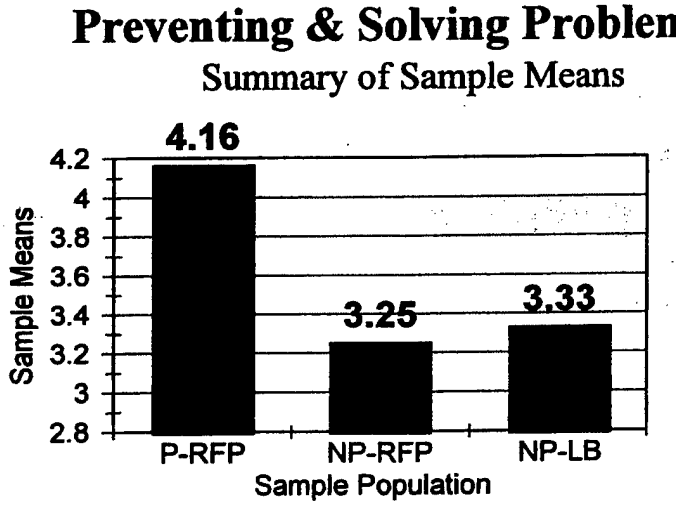

Figure 9: Preventing and Solving Problems Summary

Though not fitting the expected pattern for Non-Partnered/RFP, the Partnered scores were expected much higher as this is one of the main strengths of Partnering. Many problems with construction site coordination and scheduling can be traced to miscommunication or non-communication. Also, a lack of mutual trust leads the parties to suspect one another when a problem creeps up and may inhibit communication. With Partnering, scheduling and coordination problems are more likely to be aired quickly and resolved due to the open nature of the relationship. An owner who specifically identified a communication problem in a JOC contract also stated "It seems that scheduling problems, site coordination problems, and dissatisfaction is the norm."

Contractor's Management Effectiveness

The management effectiveness was evaluated due to its significance in JOC. The contract can be difficult to manage since it is made up of many small delivery orders comprising many different types of work. Often, there are dozens of jobs going on simultaneously in widespread locations throughout a site. On top of that, the urgency of many JOC jobs requires expedited materials, flexible scheduling requirements, and working around tenants. The owner's perception of the contractors management effectiveness is a key indicator of a successful project. The Partnered sample population in Figure 10 has much higher test scores in this field, with the Non-Partnered scores essentially the same.

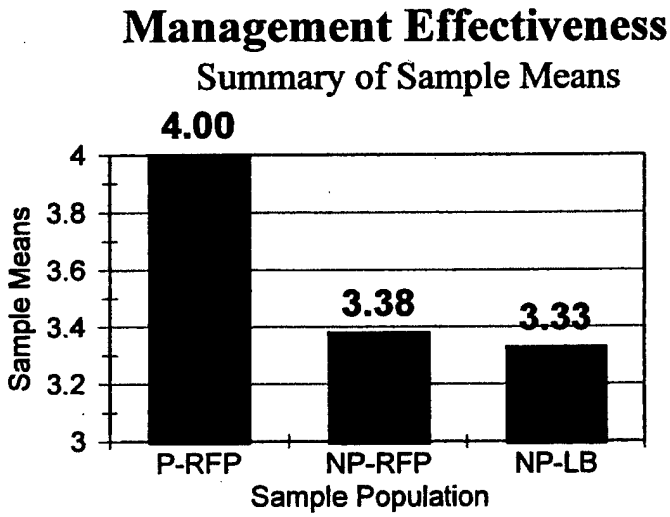

Figure 10: Management Effectiveness Summary

Level of Administrative Effort

In theory, the owner's administrative effort should be reduced in a Partnered environment, since the need for dispute-oriented documentation is greatly eliminated. Though there is an additional effort required for Partnering, it is seen as an up-front

investment that should save time later in the project by preventing problems and quickly resolving those that do come up. Also, RFP projects should have reduced administration costs due to the selection of a qualified contractor and presumably an adequate coefficient.

Analysis of the responses, shown in Figure 11, indicates that over half of the owners on negotiated contracts assessed the administrative effort as average or better. Over half of the owners on low bid contracts rated the administrative effort as higher than normal.

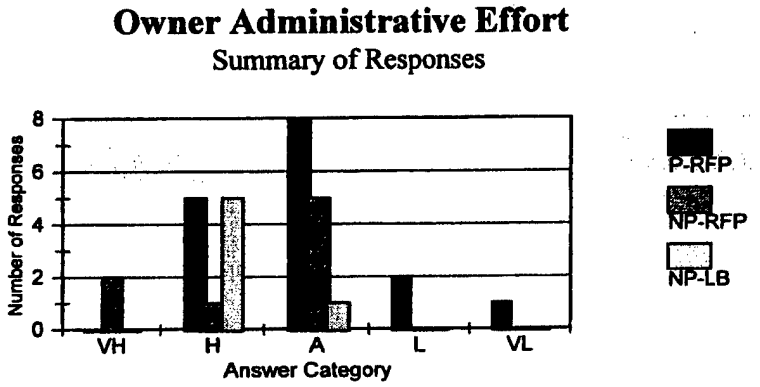

Figure 11: Owner Administrative Effort Summary

In Figure 12, the contractors' responses on their level of administrative effort are summarized. In all three types of contracts, over half the contractors rated the amount of administrative effort as higher than normal. This indicates that the contractors perceive very little difference in their administrative workload based on the contract format.

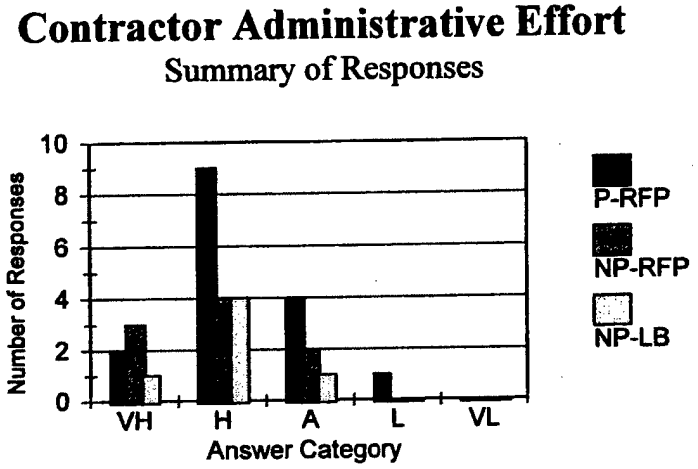

Figure 12: Contractor Administrative Effort Summary

Reasonableness of Owner's Inspection and Quality Assurance Programs

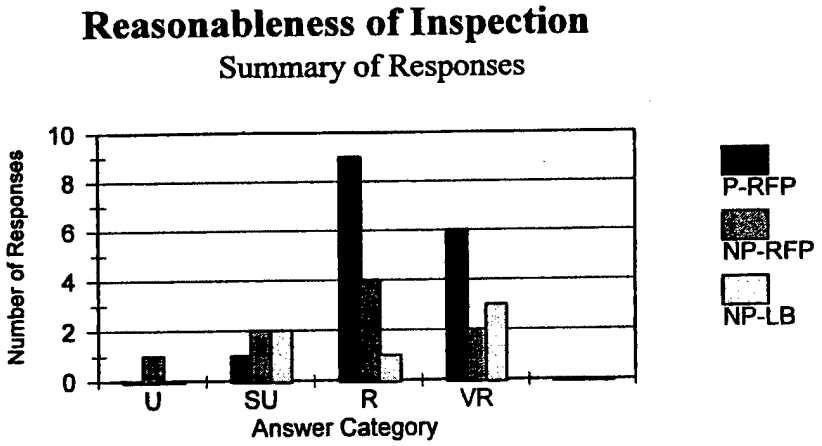

Figure 13: Reasonableness of Inspection Summary

Figure 13 shows a summary of responses from contractors who were asked to grade the reasonableness of the owner's inspection and Quality Assurance programs. The contract format theoretically has little to do with the reasonableness of the owner's

inspection and Quality Assurance efforts. After all, in JOC contracts with government employees conducting oversight, the main focus is on fair and accurate assessments of the contractors quality control program. It would be expected that in the majority of cases, the contractors would, at a minimum, view the owner's efforts as usually fair and accurate, with an occasional inaccurate assessment. This definition fits the reasonable category in Figure 13 and the highest-frequency answers were at least reasonable, with Non-Partnered/Low Bid having a majority in the very reasonable category.

However, in situations where trust is low, owner representatives tend to increase inspection efforts in an attempt to "keep the contractor honest." Though sometimes the increase in monitoring is warranted, in other cases overzealous inspection may result, with a corresponding decrease in the quality of the contractor-owner relationship. It is interesting to note here that, although the Partnered responses outnumber the Non-Partnered responses 16 to 15, the number of Non-Partnered respondents who stated that the owner's efforts were unreasonable or somewhat unreasonable outnumbered their Partnered counterparts by a ratio of five to one.

3.3 Relationships

The maintenance of a good relationship between the owner and contractor is essential to the success of a JOC. The repetitive nature of job order negotiations, combined with the fairly open structure of the contract, means that parties that get along well in a team environment will do much better in a JOC than those who thrive on the well defined structure of the traditional competitively bid contract. For some, it is a welcome change from the adversarial roles inherent in lump sum contracting. For others who are resistant to change, the attempts to administer JOC projects with a competitive bid mindset tend to result in hard feelings that make collaboration and negotiation difficult.

High levels of trust and communication, mutually beneficial negotiation, and

quick resolution of disputes are all indicators of a successful JOC contract, or any construction contract for that matter. Since Partnering was designed to strengthen performance in these areas, it is expected that higher scores will be particularly evident in the Partnered/RFP sample population. As for Non-Partnered/RFP contracts, it is expected that dispute resolution and ease of negotiations would be enhanced since the unit prices would allow the contractor a reasonable profit.

Ease of Individual Job Order Negotiations

The trends in Figure 14 are in line with expectations. The most difficult negotiations from both owner and contractor perspectives are in the Non-Partnered/Low Bid arena. Scores increase as low bid is replaced by RFP, then further increase with the addition of Partnering. Three interesting items are apparent from this summary.

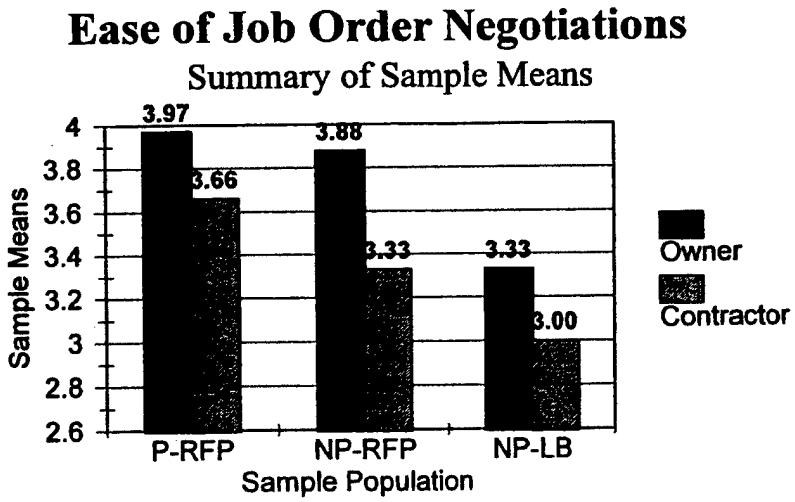

Figure 14: Ease of Job Order Negotiations Summary

First, the contractors across the board perceive negotiations are more difficult in JOC than the owners. This could be due to the fact that the contractors expend much more effort in a given negotiation than the owners do, as they prepare the proposal and

must justify the requirements for line items to the owner. This might also indicate that owners find JOC negotiations easier in general compared with their experience in more adversarial forms of contracting, while the contractors are basing their expectations on their similar experience with other JOC projects.

Second, the contractor score trend from Non-Partnered/Low Bid to Partnered/RFP is approximately linear, suggesting that the contractors' perceptions of negotiation are improved equally by the additions of source selection and Partnering.

Third, the owner scores increase the most when RFP source selection replaces low bid procurement, then slightly increase with the addition of Partnering. This would indicate that the most significant factor to the owner's perception of successful job order negotiations is the method of contractor selection.

Resolution of Changes, Claims, and Disputes

Both the owners and contractors were asked the same question on the resolution of changes, claims, and disputes that arose within their contract. The descriptive answers were amplified with definitions. An answer of exceptional meant that issues were quickly resolved with mutual benefit. Good meant most were quickly resolved with mutual benefit, though a few required lengthy negotiations. Fair was similar to good, except a few issues required more formal dispute resolution techniques, such as dispute review boards and mediation. Finally, an answer of poor indicated that the parties consistently required lengthy negotiation, formal dispute resolution, or litigation to resolve issues. Figures 15 and 16 reflect the owner and contractor perceptions of dispute resolution, respectively.

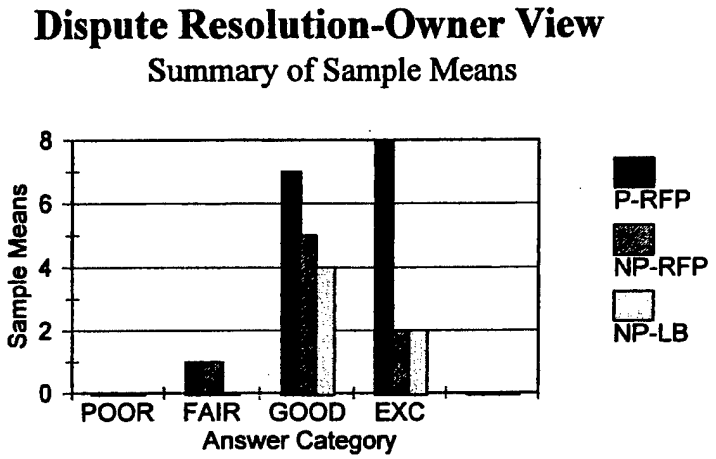

Figure 15: Dispute Resolution Summary - Owner View

The inherent nature of the JOC process encourages early dispute resolution, since the owner retains the option of issuing work under a JOC or through another contracting vehicle. If a JOC is plagued with unresolved disputes or pending claims, the owner is less likely to issue future delivery orders. Most large JOC contractors maintain a policy of using claims or litigation as a last resort in recognition of this fact, and unless significant sums of money are at stake, it is generally recognized that a loss on one or two delivery orders is preferable to 30 to 40 lost delivery orders. Therefore, the expectation was to see very few answers below fair, with most in the good category.

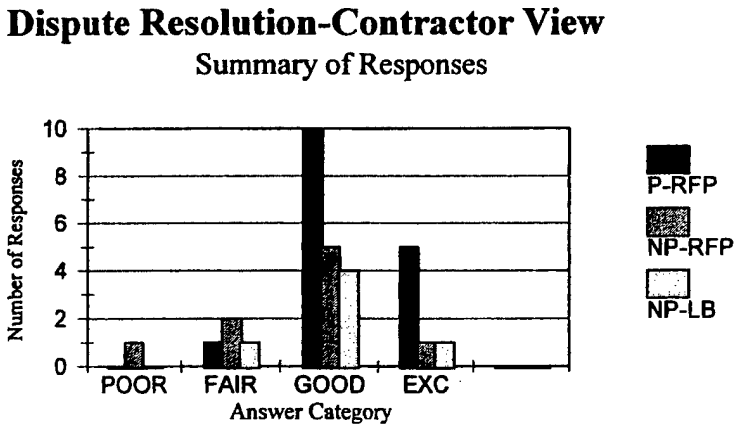

Figure 16: Dispute Resolution Summary - Contractor View

The summary of responses in Figures 15 and 16 are in line with expectations. Over half of the respondents rated dispute resolution as good or better. Half the owners using Partnered/RFP contracts rated dispute resolution as excellent. The single poor response came from a Non-Partnered/RFP contractor.

Level of Trust

Both owners and contractors were posed the same question on the level of trust that exists among project participants as compared with experience in similar contracts, or their expectations if this was the first JOC contract at the site. The five descriptive answers ranged from very low to very high.

An analysis of the summaries of responses for both owner and contractor in Figures 17 and 18 both indicate that the Partnered group has higher levels of trust than both the Non-Partnered groups. Within the Non-Partnered groups, owners perceived higher levels of trust in the RFP contracts as compared with the low bid contracts.

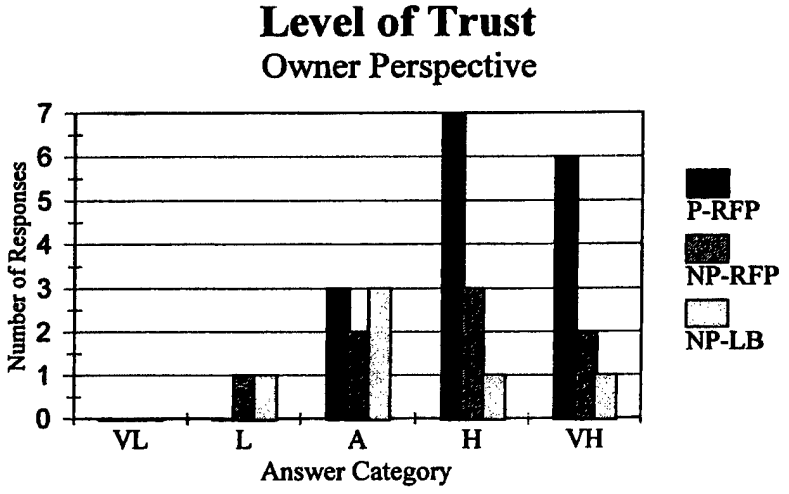

Figure 17: Level of Trust - Owner Perspective Summary

From the owner's perspective, most responses for both RFP groups were higher than normal or very high, while over half in the Non-Partnered/Low Bid group rated

trust as average or low. 81% of Partnered/RFP owners felt their sites maintained a higher than normal or very high level of trust, compared with 63% of Non-Partnered/RFP sites and 33% of Non-Partnered/Low Bid sites.

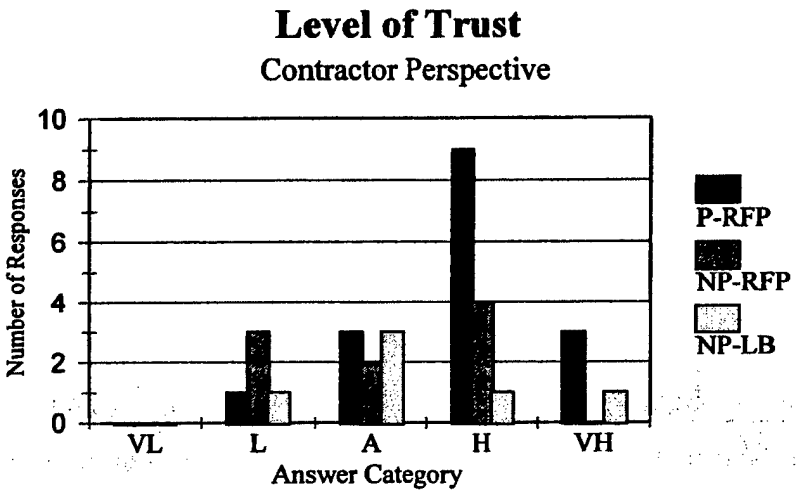

Figure 18: Level of Trust - Contractor Perspective Summary

From the contractor's point of view, the highest frequency answers were the same as the seen in the owners' responses. 75% of Partnered/RFP contractors perceived a higher than normal or very high level of trust, compared with 44% of Non-Partnered/RFP sites and 33% of Non-Partnered/Low Bid sites.

Comments from many respondents emphasized the importance of trust in the success of a JOC contract. In particular, contractors from Partnered/RFP sites were the most vocal in its promotion and made the following comments:

- "Continuous building of TRUST between contractor/owner/customer is crucial. Give & take is necessary to make the contract work."

- "The University is an honest and straightforward owner. It is these two qualities that make this a workable relationship. If they were not open and trustworthy, we would not be able to respond to their need as promptly, effectively, and efficiently."

- "High levels of trust and great partnership help to accomplish our common goals."

- "The reason that the JOC has been so successful here is because of the trust that has been developed between the contractor, Corps of Engineers, and the owner."

Trust is valued from Non-Partnered sites as well. One Non-Partnered/RFP contractor replied, "Although there is no formal Partnering process utilized on this project, there is a strong 'Team' working relationship with our government counterparts. Building and maintaining trust is the key to the success of a JOC."

Level of Communication

As with level of trust, the level of communication was measured from both the contractor and owner perspectives. Again, answers ranged from very low to very high. Figures 19 and 20 summarize the responses, which both demonstrate that the Partnered group has higher levels of communication than both the Non-Partnered groups. Within the Non-Partnered groups, owners perceived higher levels of communication in the RFP contracts when evaluated against the low bid contracts. An impressive 94% of

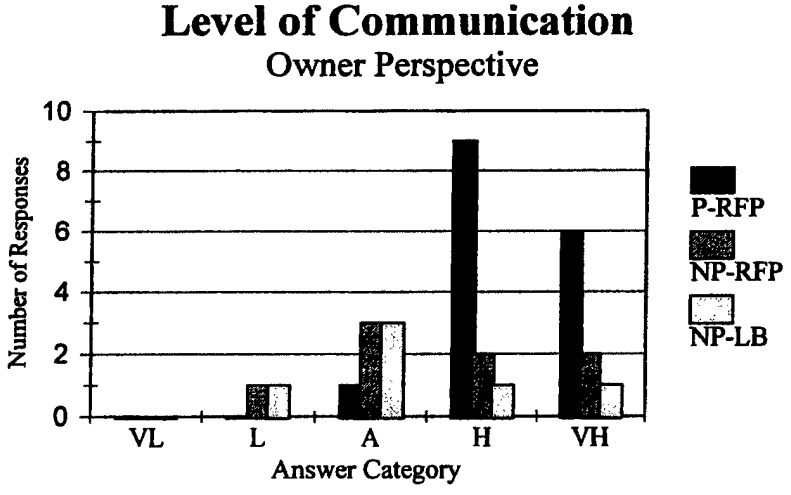

Figure 19: Level of Communication - Owner's Perspective Summary

Partnered/RFP owners felt their sites maintained a higher than normal or very high level of communication, compared with 50% of Non-Partnered/RFP sites and 33% of Non-Partnered/Low Bid sites. 75% of Partnered/RFP contractors perceived a higher than normal or very high level of communication, compared with 56% of Non-Partnered/RFP sites and 33% of Non-Partnered/Low Bid sites.

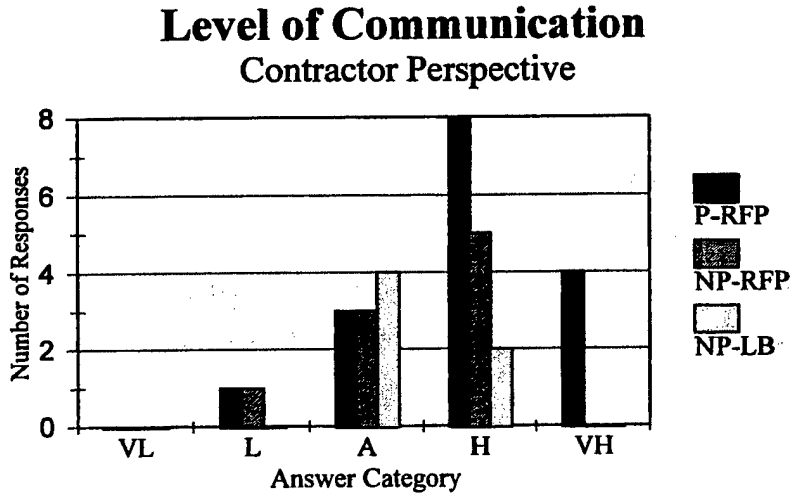

Figure 20: Level of Communication - Contractor Perspective Summary

This comment from a Non-Partnered/RFP owner underscores the importance of communication: "JOC requires constant communication and close monitoring since we lack a formal set of drawings and specifications. The technical specs that are incorporated into the contract are so generic they have little impact. Questions regarding materials, methods, scheduling, field adjustments, and customer-generated requests for changes must constantly be addressed."

3.4 Measurement of Overall Satisfaction

Though much data has been studied on individual performance factors of the JOC process, the most significant measurement of contract success is taken from the standpoint of overall satisfaction with the project. A symphony may have many talented musicians who play flawlessly, but unless all the instruments are playing well and the conductor orchestrates them properly, the audience simply will not enjoy it.

In the case of a construction contract, the audience per se is the end-user of the JOC's construction services and the one that will live with the results long after the contractor demobilizes. In addition to measuring the end-users satisfaction, the contractor and owner also must provide their opinion on how successful the contract has been. Theoretically, Partnering and source selection should enhance the satisfaction levels of both the contractor, since disputes will be reduced in number and resolved quicker, hopefully leading to a mutually beneficial result.

The efficiency of JOC will be compared with other methods to see if Partnering and source selection enhance the efficiency of the JOC process.

Customer (End-user) Satisfaction

The sample means displayed in Figure 21 show that the Non-Partnered/RFP scores are superior to Non-Partnered/Low Bid, with the Partnered/RFP mean much higher than the two other populations. The trend is approximately linear. The clear implication is that the Partnered/RFP format results in the highest levels of customer satisfaction, though in a Non-Partnered environment, RFP is superior to Low Bid.

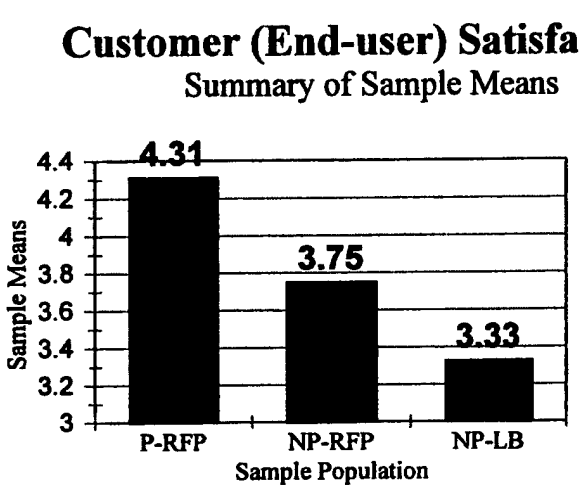

Figure 21: Customer Satisfaction Summary

Owner and Contractor Overall Satisfaction

The owner responses presented in Figure 22 clearly indicate much higher levels of satisfaction with Partnered/RFP contracts. More significantly, however, 100% of Partnered/RFP owners surveyed report Higher-than-normal or Very-high levels of satisfaction, compared with 63% of Non-Partnered/RFP owners and 33% of Non-Partnered/Low Bid owners.

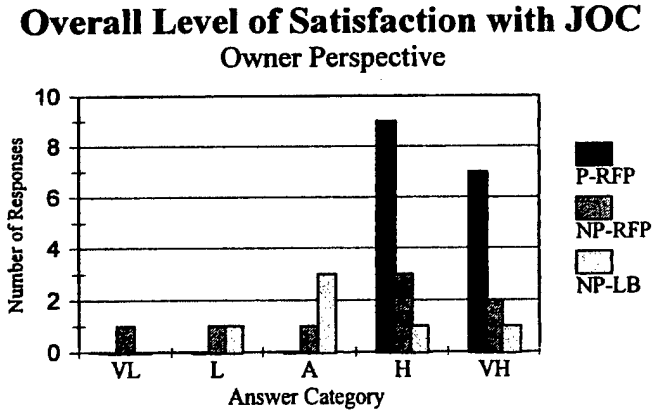

Figure 22: Overall Satisfaction Summary - Owner

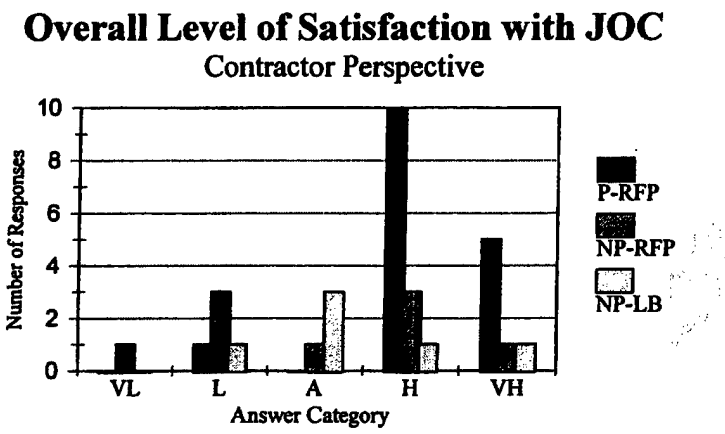

Figure 23: Overall Satisfaction Summary - Contractor

As expected, the contractor responses presented in Figure 23 parallel the owner answers. 94% of the contractors at Partnered/RFP sites reported higher than normal or very high levels of satisfaction, compared with 44% and 33% in the Non-Partnered/RFP and Non-Partnered/Low Bid populations, respectively. Once again, the Partnering/RFP sites display much higher levels of overall satisfaction with the contract.

Efficiency of JOC contracts

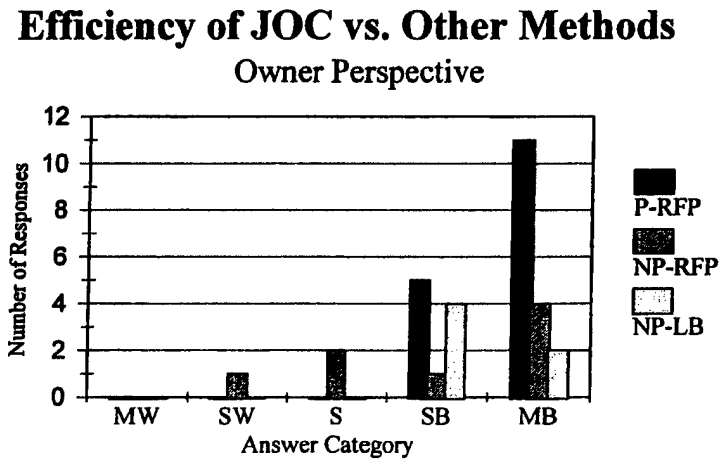

Figure 24: JOC Efficiency Summary

Since the JOC process is inherently more efficient for the completion of small projects than traditional sealed bid methods and other types of contracting, the data in Figure 24 was expected to slant toward the "better than" side of the scale. 69% of Partnered/RFP sites were rated much better than other contracting methods as compared with 50% for Non-Partnered/RFP and 33% for Non-Partnered/Low Bid.

Comments from Respondents

Though comments made at the end of the questionnaire were not requested for specific comparison, the respondents expressed some valuable information that illuminated the response received. Where possible, comments that were germane to an area under analysis were presented along with the data.

However, one area of interest discussed more than once in the comments that was not part of the study concerned the number and stability of the personnel involved in the JOC process. Respondents specifically identified this area as having a major impact on the success of the project. The following comments were made on the subject of staffing and administration:

- Contractor: "We have been here for 8 years working with the same people day in and day out and we have become a team."

- Contractor: "We have a very good working relationship with the Army and COE. I attribute our continued success (2 JOC projects) to stability of the [contractor] team, our knowledge of construction, and our close relationships with the owner."

- Contractor: "The process of construction demands consistency in expectation by the contractor from the owner (gov). Probably the greatest deterrent to a successful Partnering is how each SABER contracting officer interprets their duty requirements of the contractor. With each new change of personnel, a new way of doing things is implemented, some better than others but a moving target at best."

- Contractor: "We have had to work hard at this contract, probably because of the number of people involved. We are working with 4 Corps of Engineer districts in 5 different states. Negotiations are held with quite a large number of participants. Inspections, as you can imagine, can be trying."

- Owner: "The JOC process is a good one if the contractor takes a serious interest in its success. We have been exposed to about four project managers during the 9 months of this contract and at times we were unsure of who was truly in charge."

- Contractor: "[Owner] has the most frequent turnover of both contracting & CE staff and the vast majority are trainees."

Clearly, both owner and contractor should attempt to keep turnover to a minimum in JOC and aim for consistency in contractual expectations by keeping the number of personnel down to a manageable level.

3.5 Statistical Analysis

The data collected through the survey responses was subjected to analysis to determine its statistical significance. A numerical score was first assigned to every answer. For those questions that had already been reported as numbers, they were scored as reported. For descriptive answers, numbers were assigned to each category according to the following convention:

- For answers ranging from "Very Low" to "Very High": 1 - 5
- For answers ranging from "Poor" to Exceptional: 1 - 4
- For answers ranging from "Much Worse Than" to Much Better Than": 1 - 5

Next, a series of histograms was developed to determine if a normal distribution of data existed for answers given by a certain sample population. If two sets of data to be compared were of a normal distribution, a comparison of small sample means via the t-

test was used. If the data did not meet that criteria, the Mann-Whitney U-Test of sample medians was employed.

In comparing the data, the response scores for each question was analyzed in three separate tests:

1. Non-Partnered/RFP vs. Non-Partnered/Low Bid
2. Non-Partnered/RFP vs. Partnered/RFP
3. Partnered/RFP vs. Non-Partnered/Low Bid

This resulted in 84 comparisons (28 questions x 3 tests). Of all the comparisons conducted, only three could be performed by the small sample means test, with the rest conducted by the Mann-Whitney U-Test. It was decided to run all 84 comparisons through the Mann-Whitney U-Test as well as perform the three small sample means tests. All tests were conducted with a significance level of 0.05.

The development of a decision rule centered around a one-tail test. Three different decision rules were developed according to the expectations of the responses:

Decision Rule #1 - Non-Partnered/RFP vs. Non-Partnered/Low Bid

Null Hypothesis: Performance of Non-Partnered/RFP projects is the same as or inferior to Non-Partnered/Low Bid projects.

Alternate Hypothesis: Performance of Non-Partnered/RFP projects is superior to Non-Partnered/Low Bid projects.

Decision Rule #2 - Non-Partnered/RFP vs. Partnered/RFP

Null Hypothesis: Performance of Partnered/RFP projects is the same as or inferior to Non-Partnered/RFP projects.

Alternate Hypothesis: Performance of Partnered/RFP projects is superior to Non-Partnered/RFP projects.

Decision Rule #3 - Partnered/RFP vs. Non-Partnered/Low Bid

Null Hypothesis: Performance of Partnered/RFP projects is the same as or inferior to Non-Partnered/Low Bid projects.

Alternate Hypothesis: Performance of Partnered/RFP projects is superior to Non-Partnered/Low Bid projects.

The three small sample means tests did not produce statistically significant results. Of the 84 Mann-Whitney U-Test comparisons conducted, there were only 13 cases where the data was statistically significant and the null hypothesis was rejected. These cases are presented in the form of the alternate hypothesis:

Non-Partnered/RFP vs. Partnered/RFP

1. Owner Question #3: The quality and frequency of innovative ideas and Value Engineering proposals from contractors within Partnered/RFP contracts are superior to Non-Partnered/RFP contracts.

2. Owner Question # 4: Contractor responsiveness to client needs within Partnered/RFP contracts is superior to Non-Partnered/RFP contracts.

3. Contractor Question # 7: The level of trust within Partnered/RFP contracts is superior to Non-Partnered/RFP contracts.

4. Contractor Question # 9: The overall satisfaction of contractors within Partnered/RFP contracts is superior to Non-Partnered/RFP contracts.

Partnered/RFP vs. Non-Partnered/Low Bid

5. *Owner Question #1:* The responsiveness and timeliness of cost estimates and "basic" drawings from contractors within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

6. *Owner Question #8:* The contractors' ability to prevent and solve scheduling and site coordination problems within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

7. *Owner Question #10:* Customer (end-user) satisfaction within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

8. *Owner Question #11:* The management effectiveness of contractors within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

9. *Owner Question #17:* The required level of administrative effort within Partnered/RFP contracts is less than within Non-Partnered/Low Bid contracts.

10. *Owner Question #18:* The level of trust within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

11. *Owner Question #19:* The level of communication within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

12. Owner Question #20: The owners' level of overall satisfaction within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

13. *Contractor Question #9:* The contractors' level of overall satisfaction within Partnered/RFP contracts is superior to Non-Partnered/Low Bid contracts.

Chapter IV: Conclusions and Recommendations

Conclusions

Job Order Contracting is a very popular method with facility owners who need a responsive method for accomplishing small construction and repair projects in a streamlined manner. However, the relationships of the parties in such an open and flexible structure plays a much greater role in the project's success as compared to more traditional contracting methods. The formal Partnering process that serves to strengthen and focus these relationships toward a common vision of success should therefore have a significant impact on the performance of JOC contracts. In addition, the selection of a qualified, responsive JOC contractor through a source selection process should yield better performance then can be gained through competitive bid.

Though this study did not produce a large volume of statistically significant data with which to draw sweeping inferences, a few key areas studied did show that owners and contractors feel that Partnering and RFP source selection add value to the JOC process. Among projects that were procured through RFP source selection, Partnered contracts had significantly higher levels of contractor innovation, contractor responsiveness to client needs, trust among project participants, and contractor satisfaction.

When Partnered contracts procured through RFP source selection were compared with Non-Partnered, low competitive bid contracts, the results were more impressive. From the owner's perspective, the contractors in the Partnered/RFP format were much more responsive with cost estimates and required drawings, displayed greater management effectiveness, and were more able to solve and prevent scheduling and site coordination problems. In addition, Partnered/RFP owners reported a reduced level of administrative efforts in their projects. Among project participants, those in the Partnered/RFP population enjoyed higher levels of trust and communication than their

Non-Partnered/Low Bid peers.

The most significant result in the comparison of Partnered/RFP projects to Non-Partnered/Low Bid projects was in the area of overall satisfaction. A consensus of the three different groups involved in the process, owner, contractor, and end-user, all reported much higher levels of satisfaction under the Partnered/RFP format. Since this takes into account how all the various elements of the contract perform as a whole, it is very strong endorsement of Partnering and source selection.

The results can be summed up in an especially poignant comment from an owner in the Partnered/RFP group:

- "I have been involved with JOC going on 11 years. The lesson that I have learned is to have a good relationship with the contractor and have a contractor with a good track record....Do some calling, check other places where the contractor has worked, and ask about their performance. This could save a lot of problems later on."

Recommendations

Based on the study results, facility managers who want to have a responsive and cost-effective contract that is relatively easy to administer and generates high levels of customer satisfaction need to select JOC contractors through a process of source selection that values past performance and qualifications. Artificially low coefficients should be avoided. Once a contractor is selected, the owner and contractor should implement a robust Partnering program that is continually championed and reinforced. Personnel changes should be kept to a minimum, but new personnel should be indoctrinated as to the common goals in the Partnering charter as they join the team.

Many of the Mann-Whitney U-Tests that were run and did not produce significant statistical data were very close. In fact, 24 of the 71 failed tests (34%) scored 90% or more of the points required to prove statistical significance. This is attributed to the small sample size in the Non-Partnered populations. A further study could expand the

number of sites included in the survey and possibly produce more statistically significant results.

The primary basis for this study was subjective opinions of contractor performance. Another study might include objective measures of performance such as cost escalation, on-time completion of delivery orders, and other similar metrics.

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Appendix A: Owner JOC/SABER Questionnaire

Date contract awarded:_____ Length: Base years:_____ Option Years:_____

Current year:_____Maximum annual contract value:$_____

Number of JOC/SABER contracts on site:_____ Number of contractor management staff:_____

Type of estimating manual (check one): ❑ Army UPB ❑ R.S. Means ❑ Other:_____

Is a formal Partnering process utilized on this contract? ❑ Yes ❑ No

Contract Procurement Method:

❑ Lowest bidder: Full and open competition without pre-qualification

❑ Lowest pre-qualified bidder: Lowest bid selected after pre-qualification process (select bidder's list)

❑ Negotiated: Source selection process with weighted evaluation based on price and other factors

❑ Other:_____

Contractor Performance Ratings	(1 = Poor, 5 = Outstanding)	Rating
1. Responsiveness and timeliness of cost estimates and "basic" drawings:	(1-5)	_____
2. Ease of individual job order negotiations:	(1-5)	_____
3. Quality/frequency of innovative ideas and Value Engineering proposals:	(1-5)	_____
4. Responsiveness to client needs:	(1-5)	_____
5. Quality of construction:	(1-5)	_____
6. Contractor's safety performance:	(1-5)	_____
7. Subcontractor scheduling and performance:	(1-5)	_____
8. Ability to prevent and solve scheduling and site coordination problems:	(1-5)	_____
9. On time completion of job orders:	(1-5)	_____
10. Customer (end-user) satisfaction:	(1-5)	_____
11. Contractor's management effectiveness:	(1-5)	_____
12. Warranty service:	(1-5)	_____

Team Performance Questions (check most applicable box)

13. Adequacy of contractor coefficient:

❑ Very High: High prices of proposals limit our ability to issue delivery orders under contract

❑ High: Prices for proposals seem slightly high as compared to local construction costs

❑ Reasonable: Prices for proposals reasonably in line with local construction costs

❑ Low: Prices for proposals seem slightly low as compared to local construction costs

❑ Very Low: Low coefficient seems to negatively impact contractor's performance/profitability

14. Level of design required for average delivery order:

- ❑ Same level that is required for standard bid procurements (full plans/specs)
- ❑ Owner develops partial plans and specifications that are abbreviated for JOC/SABER
- ❑ Owner prepares limited design based on jointly developed scope of work
- ❑ Contractor prepares limited design based on jointly developed scope of work, owner approves
- ❑ No design, just a basic schematic and an jointly developed scope of work

15. Resolution of changes, claims, and disputes:

- ❑ Exceptional: Parties consistently resolve issues quickly to the benefit of all concerned
- ❑ Good: Most issues resolved quickly with mutual benefit, though a few require lengthy negotiation
- ❑ Fair: Most issues resolved either quickly or with lengthy negotiation, but a few require more formal dispute resolution techniques (mediation, review boards, etc...)
- ❑ Poor: Parties consistently require lengthy negotiation, dispute resolution, or litigation to resolve issues

16. Overall value of contractor's construction services as compared to cost, considering responsiveness, quality, customer satisfaction, and other intangible elements:

- ❑ Exceptional: The services provided by the contractor add tremendous value for the cost
- ❑ Good: We receive sufficient value for our construction dollars
- ❑ Fair: JOC is good for some jobs, but we get better value through other procurement means
- ❑ Poor: JOC/SABER is too expensive for the value we receive

17. Level of owner's administrative effort as compared with experience in similar contracts (or expectations, if first JOC/SABER contract):

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

18. Level of trust among project participants as compared with experience in similar contracts (or expectations, if first JOC/SABER contract):

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

19. Level of communication among project participants as compared with experience in similar contracts (or expectations, if first JOC/SABER contract):

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

20. Overall level of satisfaction with this JOC/SABER contract:

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

21. How do you rate the efficiency of your JOC/SABER contract compared to other methods of project delivery?

❑ Much better than ❑ Slightly better than ❑ Same as ❑Slightly worse than ❑ Much worse than

Comments about the JOC process at your site:_____

Thank you very much for your time. If you would like a copy of the survey results, please check the box below and provide an address. Again, your support of this effort is greatly appreciated.

❑ I would like a free copy of the survey results. Please send to:

Name:_____

Address:_____

City, State, Zip:_____

Control # JOC-_____

Appendix B: Contractor JOC/SABER Questionnaire

Date contract awarded:_____ Length: Base years:_____ Option Years:_____

Current year:_____ Maximum annual contract value:$_____

Number of JOC/SABER contracts on site:_____ Number of contractor management staff:_____

Type of estimating manual (check one): ❑ Army UPB ❑ R.S. Means ❑ Other:_____

Is a formal Partnering process utilized on this contract? ❑ Yes ❑ No

Contract Procurement Method:

❑ Lowest bidder: Full and open competition without pre-qualification

❑ Lowest pre-qualified bidder: Lowest bid selected after pre-qualification process (select bidder's list)

❑ Negotiated: Source selection process with weighted evaluation based on price and other factors

❑ Other: _____

Owner Performance Ratings (1 = Poor, 5 = Outstanding)		Rating
1. Ease of individual job order negotiations:	(1-5)	_____
2. Responsiveness and timeliness of owner support (RFI, submittals, etc...):	(1-5)	_____
3. Reception to innovation and Value Engineering proposals:	(1-5)	_____

Team Performance Questions (check most applicable box)

4. Reasonableness of owner's inspection/Quality Assurance efforts:

❑ Very reasonable: Consistently fair and accurate assessment of quality control and workmanship

❑ Reasonable: Usually fair and accurate, occasionally making unfair and inaccurate assessments

❑ Somewhat unreasonable: Varies between fair/accurate and unfair/inaccurate assessments

❑ Unreasonable: Consistently unfair and inaccurate assessment of quality control and workmanship

5. Resolution of changes, claims, and disputes:

❑ Exceptional: Parties consistently resolve issues quickly to the benefit of all concerned

❑ Good: Most issues resolved quickly with mutual benefit, though a few require lengthy negotiation

❑ Fair: Most issues resolved either quickly or with lengthy negotiation, but a few require more formal dispute resolution techniques (mediation, review boards, etc...)

❑ Poor: Parties consistently require lengthy negotiation, dispute resolution, or litigation to resolve issues

6. Level of Contractor's administrative effort as compared with experience in similar contracts:

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

7. Level of trust among project participants as compared with experience in similar contracts:

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

8. Level of communication among project participants compared with experience in similar contracts:

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

9. Your overall satisfaction with contract:

❑ Very high ❑ Higher than normal ❑ Average ❑ Lower than normal ❑ Low

Comments about the JOC process at your site:_____

Thank you very much for your time. If you would like a copy of the survey results, please check the box below and provide an address. Again, your support of this effort is greatly appreciated.

❑ I would like a free copy of the survey results. Please send to:

Name:_____

Address:_____

City, State, Zip:_____

Appendix C: Summary of Survey Comments

Partnered and Best Value contracts

Owner comments:

"The JOC has turned into a very adaptable, catch-all type of tool. In today's age of dwindling budgets and the necessity to obligate funds quickly, the JOC has become the choice for fast-tracking small projects. This has also caused the use of JOC to stretch outside its intended purpose. Because of time constraints, JOC has been used in place of SAPs and low-bid IFBs. Since there has been no real research that I have seen on the cost of JOC compared to other vehicles, it is hard to say if stretching the roles of JOC is good or bad. Either way, it seems to be a necessity to accomplish tasks in the current fiscal environment. The bottom line is that the customers are very satisfied with the JOC contractor and request them all the time."

"JOC has its place when the project is fast-tracked."

"The JOC contract is good and works well for the government. Some administrative problems exist."

"JOC contract was extremely flexible and provided for a short response time. It was a wonderful tool in emergency situations and for use when trying to satisfy particularly difficult customers. Also, the JOC contractor was able, because of the constant flow of work and established presence in the area, to be cooperative with our ever-changing schedules. Quality varied from acceptable to outstanding, depending on the circumstances (and the customer's opinion, which may or may not have a basis in construction evaluation). In some cases, JOC prices were higher than those normally obtained the local market, but the JOC contract was not intended to be the most economical means of building something; it was intended to be expedient and flexible.

Our contractor literally built from specifications developed on a walkthrough and jotted down on someone's tablet. They also built from fully developed plans. Frankly, we had fewer problems with the less developed plans.

I think the JOC process is a wonderful way to direct business to the local community without the smaller firms having to deal with government red tape. It is a shame that when 90% of the JOC business ends up on the hands of small businesses that this is not allowed to be counted towards the Navy's Small Business Goals."

"Works well at our site. We have a top-notch contractor, [contractor]. They have JOC contracts around the country. They know what they are doing! They're in it for the long haul, not short term profit. They have never filed a claim. We have very open communication. Our trust level is extremely high. But - they're not perfect. They make mistakes. Some task orders should be done quicker.

It's a great contracting tool!!!"

"As a member of the Small Projects Team here we have various innovative contracting vehicles at our disposal. JOC is one of those vehicles. It works very well in some cases but there are cases where it is not the proper vehicle."

"1. Provide expeditious process in awarding construction contracts.

2. Joint scoping process which leads to less or no modification.

3. Best way to obtain contracts for non-repetitive or one of a kind projects due to multi-discipline capability of the contractor.

4. Price negotiation made easy due to usage of unit price book line items and use of PD3 estimating software."

"I have been involved with JOC going on 11 years. The lesson that I have learned is to have a good relationship with the contractor and have a contractor with a good track record. My advice if I was selecting a JOC/SABER contractor is don't always look at the low bid. The worst JOC contract you can have is one that the contractor is losing money. When this happens all performance in construction, inspection, and staffing falls below average. Do some calling, check other places where the contractor has worked, and ask about their performance. This could save a lot of problems later on. Plus, know your area and what coefficient will work."

"Contract concept works very well. Very important to meet (partner) with contractor management weekly."

"[Contractor] has been at this [facility] for 10 years and they have done a fine job. They have a healthy attitude toward their tasks and generally bend backwards to help please the customers. Good contractor!"

"#1 problem here at [facility] the contractor bid a negative coefficient. The project negotiation started off with contractor fighting a 29% national average drop. Their means to make this up is added line items which slow down the SABER process."

"Contractor is concerned about customer service, which is the key to American business. They are not greedy & do not throw problems or comments back on the government."

"Regional application of the JOC concept is sometime difficult; however, it gives our agency flexibility in contracting."

"At [facility], we have implemented a new concept for Army installations - 'Incidental Design'. For those projects that require design, a two-step process is introduced:

1. RFD: Contractor prepares and designs project and submits to government for approval.

2. RFP: Once design is approved, RFP is issued, leading to a delivery order.

We have been testing this system for one year now."

"The SABER contractor is fairly new, but (contractor name deleted) has delivered quality jobs up to this point."

Contractor comments:

"1. Continuous building of TRUST between contractor/owner/customer is crucial. Give & take is necessary to make the contract work. If foundation of trust is low, give & take is lost and battles are eminent.

2. Partnering is important. 'Partnering is not a contract; It is a moral commitment for cooperation founded on win/win relationships. It is a strategy that recognizes the value of personal relationships based on good faith and trust.'-Simpson Hayward, Inc."

"The University is an honest and straightforward owner. It is these two qualities that make this a workable relationship. If they were not open and trustworthy, we would not be able to respond to their need as promptly, effectively, and efficiently."

"This was a very good project for us. Getting used to the U.P.B. was a learning experience for all. Our projects would range from $2500.00 to over $300,000.00. The

submittal process from our subcontractors was always a slow process. The subcontractor base around [facility] was not very large. This would cause problems in getting the projects completed in a timely manner. I believe our working relationship with the client was very good."

"Some tasks are difficult strictly by nature of the contract, i.e. [facility] is difficult because of the ever changing workload and others, i.e. [facility] are difficult because of a lack of knowledge in the JOC concept. Also, we have found that the best way to keep the process on track is through Partnering sessions."

"Current contract is a continuation of previous contract. Although the admin. effort is higher than the previous contract, we feel that we are less likely to have extensive or drawn out negotiations due to the experience level of both contractor and government personnel."

"High levels of trust and great partnership help to accomplish our common goals. We have to strive to make JOC easier to use as it appears cumbersome on the front end. We have to apply and offer our expertise to add value to the JOC process. It is very responsive. On many occasions, quick turnarounds are only possible through JOC. A great tool at year end to commit funds. Easy to use to put projects 'on the shelf'. One year later, only coefficient needs to be adjusted to award. More design authority would provide greater flexibility for government to use as tool."

"The reason that the JOC has been so successful here is because of the trust that has been developed between the contractor, Corps of Engineers, and the owner. We have been here for 8 years working with the same people day in & day out and we have become a team."

"Current contract is up for rebid. We are actively pursuing another contract term, and are in the process of negotiation now. The government and our company both want to continue our contract. Hopefully, all will work out for the best. This has been a successful contract for all parties."

"We have a very good working relationship with the Army and COE. I attribute our continued success (2 JOC projects) to stability of the [contractor] team, our knowledge of construction, and our close relationships with the owner."

"The process of construction demands consistency in expectation by the contractor from the owner (gov). Probably the greatest deterrent to a successful Partnering is how each SABER contracting officer interprets their duty requirements of the contractor. With each new change of personnel, a new way of doing things is implemented, some better than others but a moving target at best. It is important to establish a contracting arm of SABER, preferably civilian, that executes the contractual obligations and expectations in a consistent manner. The other problem with SABER rests in competency of the CE overseeing the work. In many cases, undereducated CE are given the task to make decisions affecting project performance of the Contractor and have the power to prepare performance evaluations. In some cases, evaluations are made by CE not even on base or in the United States when the work was performed. These negative evaluations affect interaction of contractor & CE/SABER, diminishing potential benefits of Partnering process."

"We have had to work hard at this contract, probably because of the number of people involved. We are working with 4 Corps of Engineer districts in 5 different states. Negotiations are held with quite a large number of participants. Inspections, as you can imagine, can be trying. We are working with subcontractors that we haven't been

comfortable with. It is getting a lot better as we get further along in our contract. The districts are getting to know us and the way we work. I do believe that I could probably answer these questions higher in another year."

"The gov't seems to have a problem following the procedures that they have established."

"This is our third 5-year contract at [facility]. We feel we have a good rapport with our SABER counterparts and the individual users on base. Our name is recognized and we have a reputation for delivering a quality product for a reasonable cost for sooner than the traditional method of 'street bidding'."

Non-Partnered and Source Selection Contracts

Owner comments:

"Since this is our first year with a JOC contract, there are growing pains. The contractor has come in with a limited staff expecting a fairly high amount of construction. I feel that the contractor could have played a bigger role in "selling" themselves as well as the JOC concept. In the interest of a long term relationship, they should be exceeding expectations in order to "win" over users. Unfortunately, [owner] has a competitive renovations group (in-house) that makes the environment less clear cut. Since customers can go either way, they tend to seek pricing to see which alternative is better. We are also trying to establish clear cut procedures for administering JOC projects. Once these are more entrenched and users become comfortable, the contract should be more effective. An unsophisticated owner's knowledge of proper JOC structure (owner resources and procedures) has caused us a slow start.

"The JOC process is a good one if the contractor takes a serious interest in its success. We have been exposed to about four project managers during the 9 months of this contract and at times we were unsure of who was truly in charge. They have never provided us with sufficient quality control, causing the government to reject a lot of the installed work and have them re-do. They used a lot of unqualified sub-contractors to perform tasks."

"Although the negotiated construction costs may be slightly higher than competitive bidding, when the total acquisition costs are considered, JOC is a great bargain. If there is a drawback on the admin. side, JOC requires constant communication and close monitoring since we lack a formal set of drawings and specifications. The technical specs that are incorporated into the contract are so generic they have little impact. Questions regarding materials, methods, scheduling, field adjustments, and

customer-generated requests for changes must constantly be addressed.

"Currently we are using a UPB (unit price book) that is approx. 6 years old. For the next JOC contract I will go with R.S. Means as the price book. JOC is still the best bang for the buck as far as contracts go in the U.S. Army. Now with the change in AFARS, our job is getting easier all the time."

"The Air Force utilizes the JOC contractor through the Corps of Engineers. There is usually a large communication gap from the Air Force's requests to the contractor's delivery. It seems that scheduling problems, site coordination problems, and customer dissatisfaction is the norm."

Contractor comments:

"Negotiations are not structured to evaluate the appropriate line item & quantity required as intended. The owner's contract & tech. representatives consistently fixate on the price of the item. Another practice that I find highly irregular (other contracting officers have identified it to be illegal considering this is not a procurements contract) is the technical rep's tendency to solicit bids from other subs and suppliers as a bargaining tool or point of negotiation. They have even gone so far as to omit the line items from negotiation that the contractor will realize a profit and overhead gain, and then to retain those line items that they know the contractor will have to furnish or perform the labor and materials at cost or a loss. This is an unusual practice that I have not had the opportunity to experience throughout the seven different JOC/SABER contracts that I have been involved with. It seems to me that there is not an adequate level of contract administration on the government's side to maintain the checks and balances."

"Owner is very understaffed, slow to respond, poorly coordinated - sets high goals for contractor but does not provide necessary support - a very irritating customer."

"JOC process at [facility] is very good overall. Most people involved are fair and reasonable."

"[Owner] has the most frequent turnover of both contracting & CE staff and the vast majority are trainees. This applies mostly to contracting. Contracting does whatever CE tells them to do. Unfortunately, Contracting takes the line of least resistance."

"Our policy does not include pursuing claims or disputes to any great length. I feel that this results in a rather one-sided contract administration on the part of our client. We are advocates of the Partnering process but have not been able to convince the owner to take the time or effort."

"Although there is no formal Partnering process utilized on this project, there is a strong 'Team' working relationship with our government counterparts. Building and maintaining trust is the key to the success of a JOC."

Partnered and Low Bid Contracts

Owner comments:

"Limited to $100,000 per job order. Submittal process needs some improvement. Provides good flexibility with having to 'rebid' projects to eliminate items to get within budget."

(No contractor comments received.)

Non-Partnered and Low Bid Contracts

Owner comments:

"Engineering requires full drawings from the contractor, which is not really what SABER is designed for. Therefore it takes the contractor more than 30 days to design some complex projects."

"I don't approve of using the Means as a cost base - too pricey and inflated. I'd much prefer to use negotiation of real costs. It's less argumentative."

"Disregarding federal contracts, one of the issues for state agencies to contend with is the contracting restrictions within their state statutes. If unit pricing is stated to be acceptable by state statutes, then JOC contracting can be done. Otherwise, the state agency will have to 'politic' the state legislature to enact changes in the statutes to allow unit pricing. We were lucky in Oklahoma with our statutes. A second comment is that both sides, owner and contractor, have to work hard to develop a sense of both being on the same 'team'. A sincere spirit of teamwork wins, an adversarial spirit loses. This is the single most important factor, in my mind, to having a successful JOC contract."

"The biggest problem we have at this time with our contract is the estimates, in particular with the mech., elect., and plumb. portion."

"This is the best IDIQ contract of the 3 I have worked with for the last 15 months. This was the only one awarded with competition. The other 2 were 8(a)s. The IDIQ is an efficient way for us to do multi-trade construction. We have 10 people in contracts here with a budget of approx. $14M. The IDIQ desk did $5M (more or less)."

"Good contractor allows for consistently well done projects & follow up work. Exceeds usual performance of IFB contractors due to on-going relationship."

"This contractor is good to work with. Changes/modifications are easily negotiated and timely. Quality of work: we are getting what we are paying for."

"I wasn't sure how to answer #21. Compared to other delivery methods, JOC is efficient in terms of quick execution and obligating year-end money. If 'value-for-the-dollar' is the measuring stick, JOC is slightly worse than other delivery methods in regard to efficiency. Overall, the 7-year experience with JOC on this base was positive. The first five years we were blessed with a good contractor. Their 17.29% coefficient allowed them to bend when we needed them to and still realize a profit. The artificial coefficient of the last two years bought us unproven subcontractors, modifications, claims, and user dissatisfaction."

Contractor comments:

"The greatest problem that I witness with this particular program is the lack of representation on the contracting side. Inexperienced or seemingly unqualified persons have held the position of contracting officer for the past 1.5 years. They have based their contractual determinations, on a large part, from opinions or advisement from the civil engineering section. This makes the contract administrative efforts seem biased and hence frustrating at best. A better understanding of the FAR as it pertains to SABER/JOC (in this case SABER) would seem to be helpful to the administration of these types of contracts. They occasionally make rulings as if the contracts were lump-sum (street or IFB contracts) based on their past contractual experience, which is not the case with the SABER programs, as I understand it. This opinion is based on my involvement with the SABER program at [facility], one of the first group of SABER

contracts awarded & and the most completely trained contracting groups that I have encountered."

"The University inspectors are inexperienced with this type of contract. Very poor estimators which makes negotiations difficult. University politics makes life interesting. The relationship between traditional A&E and the shops and the JOC program needs work. The design is out of the contractor's hands which slows the process down. The client and the contractor could both benefit from a longer base contract period with multiple option years. The overall relationship between Physical Plant and its clients is not pleasant. JOC is changing that!!"

"Physical Plant has too large a workforce so by their own admission we only do jobs they don't want to do or can't get to, also customers they can't get along with. I still like the contract and we hope to turn the tables on Physical Plant where we will get more work and better jobs. Trust only comes with performance."

"This contract was pre-empted by the Task Order Contract this year. Due to the fine line on our margin, my company opted not to bid on the Task Order Contract."